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SYNERGY: Facets of Research in Open Learning

SYNERGY
Facets of Research
in Open Learning

Foreword

By

Prof. S. BASHIRUDDIN

Editor

M. SATYANARAYANA RAO

1996

CENTRE FOR EVALUATION
Dr. B.R. Ambedkar Open University
HYDERABAD, A.P.
INDIA

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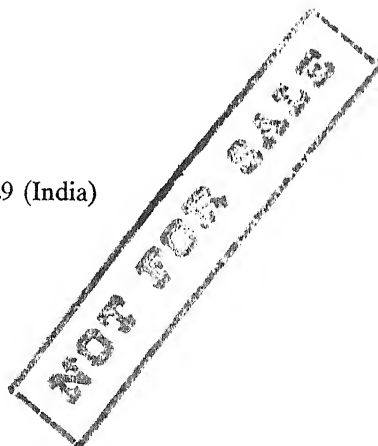
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FOREWORD

An Open University functions through learning materials publication and audio-visual modes. Constant experimentation and research are an integral part of the development process. With this objective and to give the necessary practice and confidence, Dr.B.R.Ambedkar Open University, the first Open University in India, has been encouraging the teachers and faculty members as also student support service functionaries to participate in seminars, research workshops, etc., within the country and abroad. Simultaneously the faculty is encouraged to apply for research projects and take up individual or team research activity. Certain incentives are also offered to teachers such as partial financing of publication and travel grants.

The faculty and the authorities are happy that these measures have produced the desired results. The teachers have on their own displayed the motivation to do research and publish the findings. The first collection of research articles on distance education by Dr.B.R.Ambedkar Open University was brought out in August, 1994, titled '*Distance Education An Interface*' to coincide with the shifting to the new campus which was inaugurated by the Prime Minister of India. Within a period of an year, suggestions came from the faculty on the need for a second volume: *SYNERGY* is the sequel to such suggestions.

Combined Effort

We have called this book *SYNERGY* as the combined efforts of scholars, researchers and student service officials have gone into the making of this volume. The scope of the papers is wide-ranging - strategic planning, science lab training through distance mode, women's education, management of the system, training and staff development, etc. The diversity of research areas itself may serve as an eye-opener to many who are engaged in managing the Open Learning and distance education system. We plan to keep up the tempo of research and publication including vocational education and books based upon research or high-level professional workshops and seminars. One such recent instance is the publication of the book titled "*Quality Assurance in Distance Education*", released last month by the Chancellor of the

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University. It is based on the proceedings as also the edited research papers presented at a Two-day National Workshop-cum- Seminar on the same theme held in November, 1994. The book has been widely hailed as the first publication of its kind on the topic in India in tune with the current emphasis by the UGC and National Assessment and Accreditation Council for upliftment and safeguards on quality in all aspects of higher education.

Update on Open Learning

It is hoped that SYNERGY would serve as an update on various facets of open learning through the distance mode of teaching particularly adapted to India and the developing countries. Though Dr.B.R.Ambedkar Open University's educational jurisdiction is confined to the territory of Andhra Pradesh State with a population of nearly 80 million adult men and women, the University itself has over one third of its learners and employees as women. This is also reflected in the contributors to this volume fifty per cent of whom are women. As the University's motto is service with growth and social equity, care has been taken to examine how educational facilities are provided and made to reach the scheduled castes or for that matter empowerment of women through the distance mode. Science Programmes through the distance mode were for the first time introduced in India by Dr.B.R.Ambedkar Open University in 1982- 83. We have over 10 years' vital experience and have adopted corrective measures based on the feedback and shortcomings. There are at least four articles devoted to science and vocational and technical education. A wide spectrum of issues including the use of multimedia, networking in Open Education, policy alternatives, economics of distance education and cost- saving approaches as also the need for research on distance education all find a place.

Forward Step:

I have every reason to believe that SYNERGY will be a forward step in the field of distance education with a pathfinding approach to certain areas where new directions are welcome. It would also meet the need of policy planners in the field of higher education as how to serve the ever increasing masses with skill development, acquisition of professional excellence as also access to higher education beyond the class-room and through lifelong continuing education as a means of growth and learning. We present this as a reference work with insights

into the process of the functioning of the open learning institutions in the country which are multiplying but not necessarily based on quality checks.

Academic Accountability; Team Work

Academic Accountability and excellence, rationalisation of student support services with constant feedback for improvisation and help to the adult learners by taking higher education to the remote and distant areas and making it available to several strata of population particularly the lower stratum which does not otherwise have a channel for educational development, are the salient features of Distance Education systems.

I would especially commend the efforts of Prof.M.Satyanarayana Rao, Director, Centre for Evaluation who has shouldered the responsibilities for data base preparation, evaluation studies as also coordination of research publications. Nevertheless, it is the team work that counts and all those who worked for the success of this publication such as Prof.C.Pushpa Ramakrishna and Dr.G. Srinivasacharyulu, Editorial Associates Ms.Sirisha and Dr.Malathy Krishnan who carefully read the proofs and did preliminary editing along with the staff of the Centre for Evaluation and Centre for Staff Development, and everyone who contributed an article is valued as a team worker.

We now await your feedback, dear reader.

Prof. S.BASHIRUDDIN

Vice-Chancellor

November 23, 1995
HYDERABAD, A.P.

Dr.B.R.Ambedkar Open University

CONTRIBUTORS

1. Prof. P.RAMAIHAH
REGISTRAR
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
2. Dr. U.SUBBA RAO
OFFICER INCHARGE, MATERIAL PRODUCTION
DY. DIRECTOR
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
3. Dr. P.NARSAIAH
ASSOCIATE PROFESSOR
HEAD
DEPT. OF PUBLIC ADMINISTRATION
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
4. Dr. A.SUDHAKAR
ASSISTANT PROFESSOR
DEPT. OF COMMERCE
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
5. Mr. E.CHANDRAIAH
ASSOCIATE PROFESSOR
DEPT. OF COMMERCE
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033

-
6. Prof. K.KUPPUSWAMY RAO
DEPT. OF MATHEMATICS
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 7. Prof.(Ms.)C.PUSHPA RAMAKRISHNA
INCHARGE, STAFF TRAINING & DEVELOPMENT
DEPT. OF ENGLISH
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 8. Prof. V.VENKAIAH
DIRECTOR, STUDENT SERVICES
DEPT. OF BUSINESS MANAGEMENT
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 9. Dr.(Ms.) P.VIJAYALAXMI PANDIT
INCHARGE, WOMEN'S STUDY CELL
DY. DIRECTOR, STUDENT SERVICES
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 10. Dr. (Ms.) G.SAROJA
DOCUMENTATION ASSISTANT
LIBRARY
Dr.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 11. Dr. V.CHANDRASEKHARA RAO
ASSOCIATE PROFESSOR
HEAD
DEPT. OF LIBRARY SCIENCE
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
-

-
12. Prof. M.SATYANARAYANA RAO
DIRECTOR,CENTRE FOR EVALUATION
HEAD
DEPT. OF POLITICAL SCIENCE
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 13. Dr. G.SRINIVASACHARYULU
ASSOCIATE PROFESSOR
CENTRE FOR EVALUATION
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 14. Dr.(Ms.) I.DAMAYANTHI DEVI
ASSOCIATE PROFESSOR
DEPT. OF ZOOLOGY
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
 15. Dr.(Ms.) SARASWATHI RAO
ASSISTANT PROFESSOR
DEPT. OF BOTANY
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46,
JUBILEE HILLS
HYDERABAD-500033
 16. Dr.(Ms.) GIRIJA NETI
ASSOCIATE PROFESSOR
HEAD
DEPT. OF ZOOLOGY
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46,
JUBILEE HILLS
HYDERABAD-500033

-
17. Dr.(Ms.)SHAKEELA KHANAM
ASSISTANT PROFESSOR
DEPT. OF HINDI
DR.B.R.AMBEDKAR OPEN UNIVERSITY
ROAD No. 46, JUBILEE HILLS
HYDERABAD-500033
18. Dr.(Ms.) C.SESHARATNAM
DY. DIRECTOR
RAILWAY DEGREE COLLEGE
DR.BRAOU STUDY CENTRE
LALLAGUDA,
SECUNDERABAD-500017

Validation of Distance Education Programmes in BRAOU

1

P.Ramaiah

INTRODUCTION

After having faced the problem of being evaluated on the criteria of conventional Universities for the past ten years, Open Universities have now attained a high standard of imparting quality education and students feel proud of graduating from them.

Attaining higher levels implies thoroughness in the approach: Course writers, Counsellors, Co-ordinators, Administrators and above all, students should take pride in completing higher education through the distance mode despite various other demands on their time.

The importance of quality assurance of academic programmes of Open University has been recognised even in the Act of Dr.B.R.Ambedkar Open University in 1985 which is evident from the provision of a separate branch for programme evaluation within the Open University.

METHODS OF VALIDATION OF ACADEMIC PROGRAMMES IN BRAOU

Application of Programmed Learning Techniques

The University is adopting the self-instructional format in the development of print materials. This format brings clarity to the objectives and content of the programmes, which is necessary for validation. Systematic formats are also designed for the development of Audio-visual materials. These formats can be used as benchmarks for analysis. The formats used in the development of learning materials are used as criteria for the validation of the programmes.

Association of Reputed Academics

The University is adopting the course team approach in the development of learning materials. Reputed academics from the conventional system are associated at different stages of curriculum development and materials development. Their association brings expertise and credibility to the programmes. Validation by peer group gives academic legitimacy to the programmes.

Practitioners as Resource Persons

In the planning and development of professional programmes like Bachelor of Library and Information Sciences, Bachelor of Public Relations, Postgraduate Diploma in Public Accounting, the leading practitioners of these professions are associated in different stages of planning, development and delivery of the programmes. The practitioners' association assures the quality of the programmes. The University, by trying to develop the professional programmes based on the ideas and practice, ensures the validation of the system.

Feedback from the Learners

Learners' feedback is another mechanism used by the University for validation of its programmes. Representation is given to students in the Academic Senate which is responsible for identification and framing of regulations for academic programmes. Students are also associated as members of the review teams constituted for the purpose of revision of learning materials. Students' responses are collected through structured and unstructured means on learning materials. The course teams use these responses in validating the programme.

Evaluation Studies for Validation

The University established a separate branch, Centre for Evaluation, for purposes of formative and summative evaluation studies of the academic programmes. The Centre conducted a number of studies on the quality of print material, use of Audio-visual materials, performance of students in examinations, effectiveness of delivery system etc. (Refer to APPENDIX). These studies constitute an important input in the validation of programmes.

Quality Image

The learning materials developed by the University, particularly the print material, is extensively used by students of conventional universities. Students appearing for competitive examinations are also using these materials. If image is accepted and used as a criterion for validation, the university's academic programmes reasonably satisfy the condition.

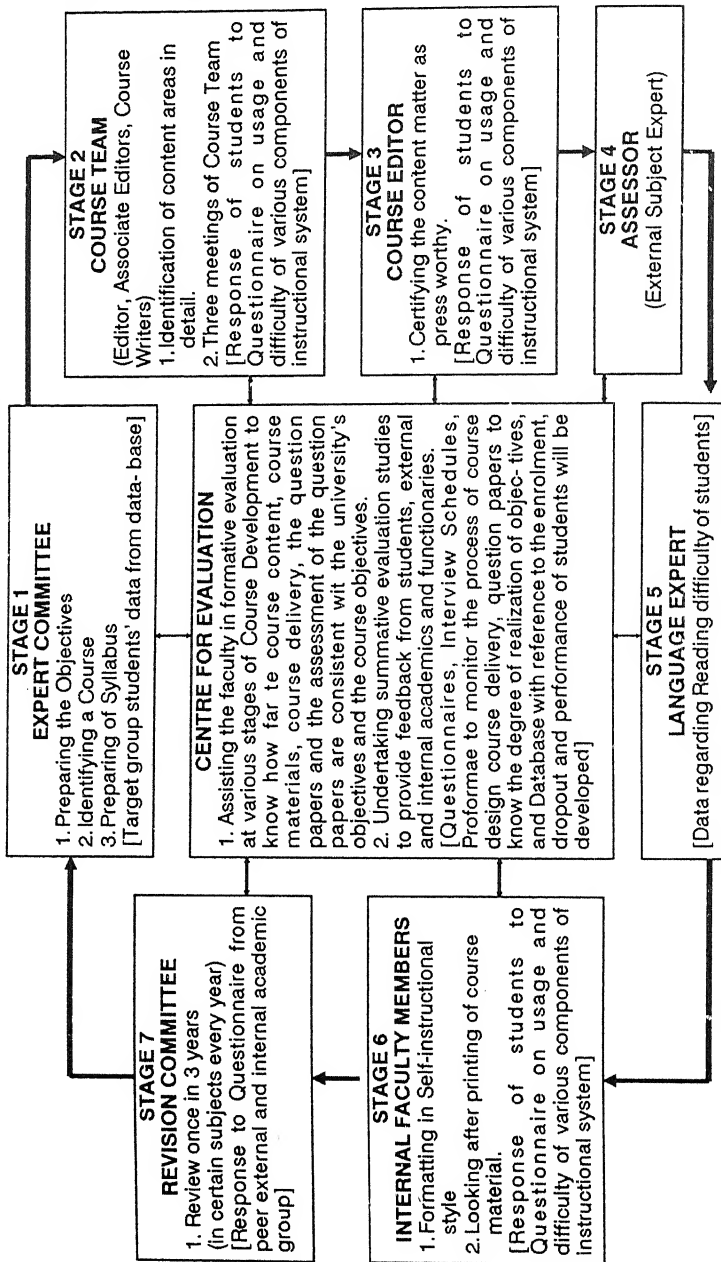
PLANNED METHODOLOGY

Even though a separate branch for programme evaluation has come into existence, it is yet to move from summative evaluation to formative evaluation, for every stage of course development to which it is relevant.

While 'Open access' and 'equal opportunity' are considered as values, very little attention has been paid to the matter of how to make these two meaningful in terms of quality of courses designed to secure socially desirable results. We cannot afford to take for granted questions relating to the kind, the quality and the content of distance education in our country. Hence the following methodology has been planned to undertake a case study of evaluation of the quality of programmes which aims at qualitative improvement in the course planning and self-validation.

APPENDIX (on next page)

Appendix : The Stages of Course Validation



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Strategic Planning for Open University Development

2

U. Subba Rao

Strategic Planning may be called a disciplined effort to produce fundamental decisions and actions that shape and guide an organisation, what it does, and why it does it. In the past twenty five years, strategic planning has become a standard part of managerial thinking and practice in the business world. Very recently, planners and academicians in educational institutions have become aware of how strategic planning can help their organisations.

Strategic planning, as this paper suggests, can be fruitfully applied to the educational context, particularly in the Open University, for effective growth and development of the organisation.

WHAT IS STRATEGIC PLANNING?

- Strategic planning is a future-oriented process where, an organisation specifies what it aspires to become and how it proposes to get there.
- Strategic planning is a continuous, participatory and systematic process of clarifying the organisation's directions, (that is, its mandate and mission) assessing its internal strengths and weaknesses and in the external environment its opportunities and threats and setting its goals.
- Strategic planning is identifying strategic issues facing an organisation and formulating strategies to manage the issues and establishing an effective organisational vision for the future.
- Above all, strategic planning is about causing and managing a change continuously, and the prerequisite is a desire for change.

In the structure of an Open University, too, we may identify similar steps in its

- (i) fixing or setting up of objectives for itself
- (ii) integrating its various functions towards common aims

- (iii) constant reviewing of its practices for streamlining processes and analysing its strengths, weaknesses, opportunities and threats, and
- (iv) adapting to the change and flexibility of organisational structure.

WHAT ARE THE BENEFITS OF STRATEGIC PLANNING ?

- (i) It enriches an organisation by systematic use of logic and common sense to manage the changing environment.
- (ii) It helps key decision makers to think and act strategically so as to achieve organisational goals.
- (iii) Strategic planning is not a top-down approach. It is a bottom-up approach which requires participation of all stakeholders in the planning process. This involvement, in particular, makes them co-owners of the plan and increases their commitment to its implementation.
- (iv) It enables an organisation to optimise its resources to maximise its performance.

WHO SHOULD DO THE STRATEGIC PLANNING?

The success of the efforts and activities of the organisation depends heavily on all the people working in the organisation. Every one in the organisation should be involved in the strategic planning process. Hence the various operational departments from the highest authority to senior managers of all the departments and operational personnel should be involved in the process. Since all the operational personnel contribute to the strategic planning process, the process itself is considered to be a bottom-up one.

In an Open University, the Heads of Branches, representing their functional divisions should be the 'strategic planners' providing a direction and a momentum to the decisions that govern the running of the institution.

WHAT ARE THE STEPS IN STRATEGIC PLANNING?

In a nutshell, strategic planning is a cyclical process consisting of eight steps. For instance, the steps in a model developed for carrying out strategic planning in public and non-profit organisations are:

1. Initiating and agreeing on a strategic planning process.
2. Identifying organisational mandates.
3. Clarifying the organisational mission and values.
4. Assessing the external environment: Opportunities and threats.

5. Assessing the internal environment: Strengths and weaknesses.
6. Identifying strategic issues facing an organisation.
7. Formulating strategies to manage the issues.
8. Establishing an effective organisational vision for the future.

Actions, results and evaluations thus emerge at each step in the process and there is a constant re-structuring even without reference to the end results. This strategic planning becomes an integral and on-going part of the process.

The steps in strategic planning in an Open University would be

- Setting up of objectives for an action and agreeing upon a plan of execution
- Analysing its need and relevance to the target population
- Identifying of an organisational mandate for the action, its relationship to the aims of the institution.
- Relating the plan of action to the demands of the task to be undertaken — external threats and opportunities
- Reviewing the resources, material and human, available for both the development of instructional material in print and audio/video and the support system.
- Recognising the limitations and weaknesses of the institutional structure.
- Adapting to changes necessary for implementing the idea e.g.: for support services and evaluation.
- Collecting and reusing feedback to improve the system.

How do strategies lead to ACTION and CHANGE ?

Each strategy chosen may be subdivided into a number of objectives, i.e. a strategy can be thought of as an integrated array of objectives. Once the strategy is planned the planners have to complete the following tasks;

1. Write objective Statements.
2. Develop work plans
3. Formulate Action Plans
4. Write a strategic plan by compiling all the outputs of the planning process.
5. Disseminate the strategic plan to all the stake-holders.
6. Implement the strategic plan

7. Monitor and Evaluate the implementation of the Strategic Plan. Celebrate Successes.

8. Sustain the strategic planning process a year after.

In order to achieve the best results, the organisation has to think of the strengths, weaknesses, opportunities and threats (external factors). This is called SWOT analysis. (Strengths, Weaknesses, Opportunities, Threats).

The purpose of SWOT Analysis is to enable the planners to identify the following:

- i) Strengths: Internal things we have that one could do or does well,
- ii) Weaknesses: Internal things we don't have or do not do well,
- iii) Opportunities: External factors that may help in the achievement of our mission
- iv) Threats: External factors that may be barriers to the achievement of our mission

Internal Scan:

Internal Scan is some form of regular report distributed widely within the organisation. It will need adequate staff.

For internal scan the guide is to examine the four P's

- 1. People : Human resources
- 2. Properties : Buildings, Facilities, Equipment and Tools
- 3. Processes : Such as counselling placement and M.I.S.
- 4. Products/Performance : Outputs such as a graduate being hired by various employers

External Scan:

External Scan should prompt the organisation to develop an effective management information system (M.I.S). Usually this is time-consuming, but without it, the organisation will be unable to assess objectively and unambiguously, its efficiency and effectiveness. If reasonably good MIS operations are established, the organisation will have continuous information about external trends, issues, events and internal inputs, processes and outputs.

For the external scan, the planners have to examine the political, economic, social and technological factors (PEST) in the environment

outside the organisation. This will enable them to suggest changes for the development of the organisation.

GOALS, ISSUES AND OBJECTIVES

For the successful implementation of the plans of any organisation, its goals, issues and objectives must be clearly specified. There must be proper planning to identify the thrust areas for the development of the organisation/University.

- a) Continuing Education Programme
- b) Student Support Services
- c) Industry-University interaction
- d) Staff Training and Development
- e) Womens' Development
- f) Rural Development
- g) Total Quality Management
- h) Test Planning
- i) Catering Management
- j) Advertising and Sales Promotion

Guidelines for writing Goal Statements:

- * State the REASON or rationale in one sentence
- * State concisely WHAT will be done
- * Be brief;

Example of a Goal Statement

GOAL : Staff Development

GOAL STATEMENT

In order to provide high quality education and other extension services, the competencies of our teaching, non-teaching and part time staff have to be developed continuously. This will also enable them to meet the ever-changing technological advancements.

For this we will encourage all our staff, to the extent possible within our resources, to undergo prioritised need-based development programmes and to acquire higher qualifications. The main areas of faculty development will be subject-updating, skill-development, teaching techniques, computer applications and management development. For enhancing the morale of our staff, we can identify and implement staff welfare schemes.

ISSUES

Issues are the problems to be solved or overcome in achieving a goal. Issues are identified by considering the various aspects of the goal and analysing them. Issues are usually framed as Questions starting with "How will we.....?" How can we?"

A LIST OF ISSUES FOR AN OPEN UNIVERSITY COULD BE

1. How to start offering need-based courses ?
2. How to set up linkages between the institution and the industry to impart need-based education to the students ?
3. How to identify and meet the needs of our learners ?
4. How to achieve a better student staff ratio ?
5. How to inculcate better personality and leadership qualities and confidence among our learners ?
6. How to provide flexibility of movement from the formal system of education to the open university ?
7. How to make optimum use of the entire academic year for effective training of our learners ?
8. How to plan strategies to overcome resistance to change, if any ?
9. How to meet the challenges raised by the mushrooming of Distance Education centres started by conventional Universities ?
10. How to improve employment opportunities for the products of the Open University ?
11. How to upgrade the amenities for students and staff including special needs of women candidates at study centres ?
12. How to implement MIS ?
13. How to involve and make the community aware of the Open Universities ?
14. How to attract talented persons for teaching, in the Open University?
15. How to set up a learning resource centre ?
16. How best to utilise the resources from the Indira Gandhi National Open University, the UGC, the State agencies ?
17. How to improve Library Services to meet the needs of the Faculty and students ?
18. How to streamline the distribution of course material to the learners?

19. How to get separate accommodation for study centres to boost the image of the University in the minds of students and the public?
20. How to plan for the best utilisation of the audio/video facilities at study centres?

The **WEIGHTED** approach to planning is a useful technique for analysing goals, in order to identify the issues related to a goal. Eight "W" questions are asked

1. Why? 2. What? 3. Who? 4. When? 5. Where? 6. Ways? 7. With?
8. Well (How well?)

The **SWOT** analysis information should be referred to as the examination of the goal proceeds.

OBJECTIVES AND STRATEGIES

Strategy development begins with the identification of practical alternatives for resolving the issues and achieving the goals. A strategy can be thought of as an integrated array of objectives, chosen for achieving a specific goal.

For resolving each issue, a number of alternative objectives have to be identified. Then the planners have to choose the most appropriate objective by applying well-defined criteria.

Examples of Objectives Statements

1. To assess the training needs of all categories of staff. A Staff Development and Welfare Committee (SDWC) consisting of Teaching and non-teaching staff, can assess the current required skills and knowledge of the staff, once in every three years, to develop individual training plans, to enable the staff to carry out their present and future duties effectively and efficiently in the specific areas of teaching, management and computer education. The individual training plans will be integrated and a total staff development plan can be made available.
2. To develop norms for deputing staff for higher education programmes:

The Staff Development and Welfare Committee can develop norms, once in every three years, for deputing staff members for higher education and training, using the staff development plans of the Open University. The Committee will (i) determine the criteria for eligibility, like age, years of experience both in conventional and in distance teaching, current

qualifications and performance levels etc. (ii) specify the number of staff members to be deputed every year (iii) define the salary and pre-requisites for deputing staff and the expectations from them in the future, and (iv) propose ways of post-training performance appraisal.

WORK PLANS

For every one of the strategic goals, we have to prepare a work plan. It deals with the major objectives to be completed in order to achieve a goal.

It may be a chart set out with the list of objectives down the left side and equal units of time across the top. The time units could be days or weeks or months. Lines representing duration are drawn horizontally, against each objective cutting across a specific number of time units thus showing when an activity should start and end.

ACTION PLANS

A work plan is used as a guide to develop more detailed plans called Action Plans. The action plan deals with the major tasks to be completed in order to achieve an objective. If a particular goal has six objectives then the planners have to prepare six action plans (i.e. one for each objective.)

There are inter-relationships between the work plan and action plan, and the goals and objectives.

In the action plan for each task, we have to specify who will do it, how it will be done, when it will be done and what major resources are needed to carry it out. We must also specify the indicators of success for each action plan.

MONITORING AND IMPLEMENTATION OF STRATEGIC PLAN AND SUSTAINING THE STRATEGIC PLANNING PROCESS

The main responsibility of the strategic planning group constituted, ends with the preparation and dissemination of the first strategic plan. The strategic plan has to be implemented by the teams and action leaders specified in its action plans. Before the implementation commences, the institution has to convert its strategic planning group into a " STRATEGIC PLANNING AND IMPLEMENTATION COMMITTEE". This new committee's composition, roles and functions have to be clearly specified. Its functions should include the following:

1. Monitoring implementation of strategic plan
 2. Preparing a revolving annual plan, and
 3. Coaching new members to be inducted into it.
- Detailed Terms of Reference (TOR) have to be developed for this new committee.

SUSTAINABILITY

Sustainability refers to institutionalisation of the new approach introduced so that the initiative is not only continued, but developed further and propagated to other users. This requires (i) "internationalisation" of the new initiative by all the staff of the institute and (ii) creation of necessary structures, linkages and procedures for ensuring sustainability.

KEY FACTORS FOR SUSTAINING THE STRATEGIC MANAGEMENT APPROACH FOR CONTINUOUS IMPROVEMENT IN AN OPEN UNIVERSITY

For the successful operation of an Open University, the following key factors should be kept in mind.

1. Doable projects resulting in immediate success.
2. Structure and organisation for disciplined follow-up
3. Total involvement of all staff
4. Commitment of senior staff i.e. Head of the Branch
5. A system of recognition and reward for the staff for their outstanding achievement.
6. Feed-back mechanism
7. Focus on the needs of the learners

Certain basic issues that are to be taken care of in the Open University system, have been identified below and suggestions are made for improving the system.

RECOMMENDATIONS:

- I. **A GOOD ACADEMIC ENVIRONMENT CAN BE CREATED IN THE STUDY CENTRE BY**
 1. Providing the minimum infrastructural facilities i.e. at least, a small building with 4 or 5 rooms.
 2. Strengthening the library facilities at study centres.
 3. Starting a Learning Resources Development Centre at District Headquarters.

4. Motivating the students by recognising their abilities and capabilities
5. Conducting staff development programmes
6. Providing audio-visual facilities as desired by the learners
- II. THE TEACHING-LEARNING PROCESS CAN BE IMPROVED BY**
7. Introducing performance Appraisal and Development System (PADS)
8. Exposing Faculty Members to modern theories of teaching/learning
9. Conducting subject updating programmes for Faculty entrants
10. Conducting induction training programmes for new teacher entrants
11. Encouraging Faculty members to undergo quality improvement programmes.
12. Nominating faculty members to attend short term training courses
13. Introducing a continuous evaluation system.
- III. INSTITUTE-INDUSTRY LINKAGES CAN BE ESTABLISHED BY**
14. Conducting meetings with industries
15. Constituting an advisory committee and task forces
16. Arranging lectures by experts from Industries and various Public personalities.
17. Deputing faculty members for understanding industrial needs.
18. Introducing short-term industrial exposure programmes for students.
19. Conducting Non-formal Education programmes.
20. Offering continuing education programmes.
21. Identifying development potentials at the local level
22. Identifying areas of Science and Technology interventions for the improvements of the Lifestyle of the poorest among the poor.
23. Conducting seminars, Workshops and Exhibitions
24. Establishing consultancy cells.
25. Starting community open learning activities.
26. Starting the Centre for Development of Rural Technology
27. Publishing leaflets,booklets etc., for dissemination of information in rural areas.
28. Offering Computer Software Development and Consultancy.

IV. SERVICES TO STUDENTS CAN BE ENHANCED BY:

29. Strengthening the guidance and counselling cell at the Headquarters which in turn can send the information to the study centres
30. Promoting extra curricular and co-curricular activities both at the Headquarters and the Regional Level
31. Starting a placement cell through meaningful industry institute interaction.
32. Providing Industrial exposure to the second and third year students of the undergraduate degree programme.
33. Creating opportunities for interaction with community Leaders.
34. Establishing 'Quality Circles'
35. Introducing TOTAL QUALITY MANAGEMENT approaches
36. Inculcating a Team spirit
37. Boosting the morale of personnel working in the system
38. Cultivating positive attitudes among all concerned
39. Strengthening women in development programmes.
40. Introducing Management Information systems.

Strategic planning therefore, as stated earlier, can be a disciplined effort by an institution such as the open University, to bring about fundamental changes in its operations. Decisions can be effected by strategic question and functions can be guided by addressing crucial issues, either holistically or specifically. Examining the strengths and weaknesses before formulating policies, can indeed provide useful input for the open university system.

This paper has highlighted some of the questions an open university needs to raise and attempt to answer. It has not provided comprehensive lists of such questions but has suggested the direction that needs to be taken for meaningful planning and action.

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Management of Distance Education - Search for Policy Alternatives

3

P. Narsaiah and A. Sudhakar

According to the UNESCO Commission on Education (1979) (Learning to be: The World of Education today and tomorrow), "educational institutions are a decisive factor in training men to contribute to the development of society, to play an active part in life and in properly preparing men for work". Therefore, spread of education is a sine qua non both for modernization and sustenance of democracy and also to make man "be himself" and "to become himself".

India has been trying to provide access to education to large sections of our society mainly through the formal system. The assumptions of the formal system according to Prof.G.Ram Reddy, are:

- a) there should be full-time teachers to teach;
- b) the students must belong to certain age groups and be full-time learners;
- c) instruction can take place only in specially earmarked classrooms;and
- d) instruction has to be face-to-face.

It is obvious from these assumptions, that the formal system would leave out all those who cannot satisfy its requirements, thus discriminating against a major section of society which cannot afford full-time learning.

Mr.K.C. Pant, while introducing the Bill in Rajya Sabha, regarding the establishment of the Indira Gandhi National Open University, observed that "despite the tremendous expansion of formal system of higher education since independence, the pressure on the system is continuously increasing. Indeed, the system has not been able to provide an effective means to equalise educational opportunities, primarily due to its elitism, rigidities, conservatism and expensiveness".

Weakness of Conventional System of Education: The conventional system of Education, according to the policy frame of the UGC (Development of Higher Education in India: A policy frame) suffers from the following three major weaknesses:

- a)It neglects social objectives
- b) Our educational system promotes and maintains double standards in Education. There is a minority of educational institutions of high quality..... and a large number of institutions which..... do not have any standards worth speaking about.
- c) Though the formal system of education has expanded enormously, it is the upper and middle classes which are the principal beneficiaries of this system.

Since Independence the formal system of education has been strengthened but its benefits mostly go to the well-to-do classes who use it to "strengthen and perpetuate the privileges". The restricted approach to education of the Britishers has continued for long, even after Independence. It has helped a few sections of society and deprived thousands and thousands who cannot take advantage of the formal system of education.

Search for Open Learning System: The search for throwing open the 'Ivory Towers' began in England with a view to equalising educational opportunities. In other words along with political democracy, democratisation of education (on par with political democracy) started in England, perhaps in realisation of the fact that society has a responsibility to provide educational opportunities to all those who want education but who cannot make it due to in-built constraints of the formal system of education.

In order to provide genuine equality of opportunity to millions of people, the need for the open education system is greater in India than elsewhere in the world. "The Object", according to the University Enquiry Commission of Bihar Government 1983, "of this University should be to help those who wish to get higher education through self-effort and the University system need not force any one whether employed.... or not to join a college for receiving education or studying for a University degree. It should be open to all to employ their spare hours to learn through self effort for qualifying themselves for the University degree".

However, the credit for starting an Open University, an innovation in the field of conservative systems of education, goes to Britain. Realising

the fact that elitism in education and democracy in politics do not go together, the National Policy on Education, Programme of Action 1986 has observed that distance (Open) education "augments opportunities for higher education, ensures access, is cost-effective and promotes flexibility and innovative systems of education".

Objectives: This emerging system of education, says Prof.G.Ram Reddy, has the following objectives:

- a) greater equality of opportunity of access to higher education;
- b) provides opportunity for those who missed higher education when they were young and joined career;
- c) provides opportunity to those adults who would like to have access to higher education throughout their lives; and
- d) helps those who want to renew or update their knowledge while in service.

The characteristics of the Open system of education, are that (a) it offers education to every student even without any formal educational qualifications, (b) the student need not join any college but can stay at home and study, (c) a student can study at his own pace and place and convenience. In other words, it recognises self-effort, encourages self-study and extends a helping hand through learning materials, contact-cum-counselling classes, tutor comments etc.

Efforts in India: Impressed by the success of the British experiment with the Open system of Education and also realising its responsibility to the demands of growing millions of people for access to higher education, the Government of India appointed in 1974 a committee headed by G.Parthasarathy to look into the feasibility of starting a National Open University.

The Committee observed that "in a situation of this type where the expansion of enrolments in higher education has to continue at a terrific pace and where available resources in terms of men and money are limited, the obvious solution, if proper standards are to be maintained and the demand for higher education from different sections of the people is to be met, is to adopt the University system with its provision of higher education on part-time basis. Though the Parthasarathy Committee (in 1976) recommended that the Government of India should establish as early as possible, a National Open University, the lead was taken by the Government of Andhra Pradesh and Dr.B.R.Ambedkar Open University (known formerly as Andhra Pradesh Open University)

was inaugurated on 26 August, 1982 as the first full-fledged Open University of the country.

The 'population' of Open University has been increasing slowly but steadily. As of today there are seven open universities including Dr.B.R.Ambedkar Open University - one in the South India and others in North India. Of the seven Open Universities, four are functional universities and others have yet to 'take- off'. It is learnt that the Governments of Tamilnadu and Karnataka have started efforts to join the family of Open Universities. With these 'newcomers' the number of family members of this emerging system of education would increase to nine. But, by any estimate, the growth rate is not encouraging. Let us leave it there.

The slow and steady growth of Open Universities has created some problems of management and public policy, vis-v-vis the schools of correspondence courses. We turn our attention to them.

Correspondence courses,Guidelines: Before the first fullfledged Open University was inaugurated, there were hardly three schools of correspondence courses in Andhra Pradesh. Now, more or less, every conventional university has a school of correspondence course as its 'appendage'. According to the UGC Guidelines for correspondence Education :

- a) Ordinarily correspondence courses at the under-graduate level should be introduced for only one University in a state except when a University proposes to introduce Correspondence courses in a new faculty at the under-graduate level or when the University already offering correspondence courses reaches the optimum size of enrolment, namely, 10,000 or for other valid reasons;
- b) high priority should be given to the setting up of study centres in areas where there is a concentration of students;
- c) the provision of contact-programmes should be an essential feature of correspondence course programmes in order that the students may have an opportunity to have the benefit of active contact with teachers through lectures, seminars and other forms of discussion;

State of Correspondence Schools:Correspondence Education was started in India originally with a view to meet the demand for higher education and also to ease the pressure on the formal system of education in accordance with the UGC Guidelines. But, according to G.Ram

Reddy not much has been done to strengthen and improve them and as a result these institutions suffer from the following limitations:

- a) these institutes are treated as appendages of the conventional Universities. They do not have freedom either in designing their courses or in incurring expenditure. Decision-making is totally in the hands of others;
- b) their courses, regulations regarding entry, examinations etc., are the same as those stipulated for regular students. Hence, their courses suffer from the same rigidities as those of the courses designed for regular students;
- c) In most institutions, the only method of instruction is through correspondence material; and
- d) the academics and administrators of the conventional system treat correspondence education as a second class system.

Further, the open education system is viewed as a revenue earning system for the conventional universities. It is also observed that the staff who are deputed to work, in the schools of correspondence courses are those who are not wanted by the departments of the University. It is further observed that most of the schools of correspondence courses have not been making use of all the components of distance education such as the audiovisual equipment, study centres and contact programmes. What is more, they have neither a legal status nor autonomy.

Correspondence courses vis-a-vis Open Universities: On the other hand, the open system of education through Open Universities, wherever they have been started, press into service all the components of distance education such as printed material, audio-visual equipment, study centres and contact programmes. They adopt a multi-media approach. The course material is prepared by a team of subject experts drawn from all the universities of the state. Meetings with the selected writers are held, unit-wise synopsis is prepared and after editing them assessment of the same is entrusted to a noted expert in the subject. This means that it is the result of collective thinking and discussion, whereas a book in a conventional system, in most of the cases, is written by one writer.

The Open University is created by an Act of the State Legislature with its jurisdiction spreading to the entire State. It is autonomous.

Some Issues: The question that surfaces is whether the existing schools of correspondence courses should continue in the states where

there are open universities as separate entities or appendages to the conventional universities as a revenue earning system to the latter? Should the conventional universities be allowed, under the pretext of autonomy, to establish schools of correspondence course renaming them as centres for open learning?

There is no justification for the separate existence of Schools/Centres of Open Learning in such states where Open Universities are functioning for the simple reason that the education offered by the open universities is far superior to the one offered by Schools/Centres of Open Learning. The multi-media approach, the team approach in the preparation of learning material, its autonomy and statutory status gives a superior position to an open university than to a school/centre of Open Learning, which is an appendage to the conventional university. Further, there is a separate Student Support Services Branch to cater exclusively to the needs of the learners. An examination branch charged with the responsibility of conduct of examinations, publication of results, conduct of convocations adds to the prestige of the Open University. [It may be observed here that the papers of students of schools of correspondence course are kept aside and given for valuation after the valuation of the regular students thus treating them as second class students.] When better and standard education, qualitative reading material and a degree with honour and dignity is awarded in a convocation in Open University, where is the need for schools of distance education?

The following points need to be considered by the policy-makers and Educational Administrators in this regard:

- a) The schools of correspondence courses should be merged with the Open University in the States where the Open Universities are functioning.
- or
- b) As an alternative, the schools of Correspondence courses should be affiliated to the State Open University. For all purposes they work like affiliated colleges of conventional universities. The State Open University regulates, co-ordinates and controls them.
- c) For any reason if (a) and (b) are not feasible, the schools of correspondence courses should confine to the jurisdiction of their university thus avoiding 'border disputes'.

- d) Separate continuation of Open University and the schools of correspondence will check each other in regard to quality, service etc. and the learners will tend to join the better and the other one will die a natural death. That means the 'survival of the fittest'.

Coverage of Learners: Another point that needs attention of the policy makers is the coverage of learners. A look at the working of Open University/Schools of correspondence courses reveals that there is no clear picture with them regarding the target group, its coverage in next five years, ten years etc. In other words, there is no planned approach regarding the general coverage of learners and also on the basis of sex, area, age etc. As such, it is not known as to how long it takes to bring the intending learners under the Open/Distance Learning system. This is nothing but groping in the dark.

Structural constraints: One more problem of management of Open Learning system relates to its structure. For instance, Dr.B.R.Ambedkar Open University, is meeting the needs of the students from Hyderabad since its inception in 1982. While decentralisation of administration is the slogan of the 20th century, the Open varsity is still centuries back in this respect.

Need for Need-based courses: Courses offered by the open universities, more or less, are the same ones as offered by conventional universities. In addition to the conventional courses, there is an urgent need to offer socially and contextually relevant, need-based and attractive courses in areas like Technology, Electronics, Computer Applications, Agro-Industries etc. Consequent upon the implementation of 73rd Amendment of the constitution of India, thousands of SC,ST & BC candidates in addition to Women, are going to be elected to the institutions of Panchayat Raj. In order to make them participate fully and meaningfully, a training programme has to be drawn up to introduce them to the concept and philosophy of these bodies. It is also necessary to train them in the art of participation in the deliberations of these bodies. This job can be taken up on a war footing by the respective State Open Universities with financial support from the government to make our democracy a workable proposition at grassroots.

Introduction Programme: Infiltration of the formal culture in various programmes of open education is very much seen, felt and discussed. This was unavoidable in the initial years of the system. Now the time has come to stop the infiltration and eliminate the formal influence not only to establish its identity as an emerging system of education but also to carve a niche for it in the field of education.

'Teaching' of courses to the learners without 'lecturing' would be possible, if, all the counsellors are inducted in a phased manner into the open learning system through periodic training, as is being done by Dr.B.R.Ambedkar Open University. This stops demand for 'lectures' by the learners and 'enough' sessions for counsellors to 'cover' portions.

Wanted sharing culture: Library facilities are not available to the learners even on the days of contact-cum-counselling classes. Since the study centres are located in educational institutions with library facilities, those libraries should be thrown open to Open University learners. After all, the library of the host colleges is the common property of society. This calls for 'sharing culture' on the part of the host colleges in the place of 'private property' culture.

In addition, 'library corners' may be opened in public libraries with lending facilities. 'Mobile library' and lending facilities can be thought of. Abstracting service goes a long way in posting the learners with latest developments in the courses as and when these measures are taken, to make library facilities available freely, frequently and conveniently.

Preparatory courses: The first and oldest Open University of the country i.e., Dr.B.R.Ambedkar Open University has completed twelve years in the service of the learners who missed the first chance for one reason or the other, without offering preparatory course to the non-formal learners (85%) before or after the tests. Indira Gandhi National Open University (IGNOU), has taken a lead in this regard. It is high time that Dr.B.R. Ambedkar Open University follows suit.

Critical Mass: The maximum strength staff of a department of Dr.B.R.Ambedkar Open University, for example, is four-one Professor, one Associate Professor and two Assistant Professors, irrespective of the fact whether a subject is taught at the undergraduate level or post graduate level. It is worth mentioning here the recommendation of the University Grants Commission (UGC) for the correspondence courses. The UGC recommends for the correspondence courses 3 Faculty members (1 Professor + 1 Reader + 1 Lecturer) for a subject at the Undergraduate level and 3 additional, if the subject is taught at the Post-graduate level. The staff position of IGNOU is also more than that of Dr.B.R.Ambedkar Open University. Senior and mature faculty, it need not be over emphasized, is the urgent need of Open Universities. It is high time that 'critical mass' of a department is fixed at least now. Better late than never.

Credit Transfer: At present, a student of open university is prohibited from continuing his studies in the middle of the course in a conventional university and vice-versa. In order to remove this 'watertight compartment' approach to education, it is desirable, that the State Open University Dr.B.R.A.O.U. should take a lead in collaboration with other universities in developing courses that are common to both the streams of education. This calls for credit transfer of such courses which has to be initiated, encouraged and facilitated.

Two major problems: Despatch of reading materials and conduct of various examinations and publication of results have been the two major areas with which the students and observers are most unhappy. The two problems are as old as the Dr.B.R.Ambedkar Open University itself. Students without material and counsellors without syllabus are unhappy and helpless spectators. Dr.B.R.Ambedkar Open University being the first Open University in the country, has the great responsibility of finding ways and means for developing efficient, economic and satisfactory delivery of reading materials and conduct of examinations, thus setting an example for 'newcomers'.

Pioneering efforts of this kind are always faced with difficulties. The experience obtained so far by Dr.B.R.Ambedkar Open University should be reviewed to suggest measures for improvement and reforms in the Open University to suit the social, cultural and economic context of our country. Distance/open Education has come to stay. The problem is 'how to shape it' to make it hopeful, and useful. The burden is mostly, on the first Open University of the country, i.e., Dr.B.R.Ambedkar Open University.

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Networking in Open Education

4

E.Chandraiah

The concept of 'distance education' began in India as a movement of homestudy in the name of correspondence course in the 1960s, evolved into the largest concept of distance education in the 1970s, and opened out to open education system in early the 1980s. The open education system has been developed to meet the evergrowing demand for higher education. The main objective of open education is to provide opportunities for higher education to a large segment of the population including those in employment, women and adults who wish to acquire knowledge or upgrade their skills in various fields. The benefits and facilities of open education such as *accessibility* to higher education for a large segment of population with off campus system supported by multi media communication, *flexibility* with regard to the eligibility for enrollment, choice of subjects, methods of learning and cost *effectiveness* have been contributing to the development of the system. The challenge of 21st century is how to provide access to higher education to large numbers of the growing population.

The philosophy of open education is learner orientation and enables the learner to learn at his own pace and place. The important features of open education display the following: (1) open entry (2) flexibility in the choice of subjects (3) degree of cumulative credits, (4) teaching at a distance (5) continuous and /or terminal assessment (6) joint production of courses by subject experts (7) integrated multi-media communication (8) cost effectiveness, etc.

Thus, open education system is a parallel and complementary stream of education and promotes national integration and integrated development of the human personality.

Open education system was brought to India in August, 1982, with the establishment of Dr.B.R.Ambedkar Open University (formerly

known as A.P.Open University) to provide access to higher education for a larger segment of population in general and for the benefit of the disadvantaged groups who wish to upgrade or acquire knowledge through continuing education in various fields, in particular.

The success of Dr.B.R.Ambedkar Open University (the credit goes to Prof.G.Ram Reddy a pioneer in the field) paved the way for the establishment of other open universities in India. In India there are, at present, seven open universities out of which four are functional. They are: (1) Dr.B.R.Ambedkar Open University (Andhra Pradesh) (2) Indira Gandhi National Open University (New Delhi) (3) Yashwanth Rao Chavan Maharashtra Open University (Maharashtra) and (4) Kota Open University (Rajasthan). Nalanda Open University (Bihar) Rajabhoj Open University (Madhya Pradesh) and Dr.B.R.Ambedkar Open University (Gujarat) are yet to take-off. Two more open universities are likely to be started in the states of Tamil Nadu and Karnataka.

Under the supervision, control and guidance of the Vice-Chancellor, Dr.B.R.Ambedkar Open University's administration functions with six Directorates, viz., Directorates of:

1. Academic - concerned with designing and preparation of course material;
2. Student support services - Responsible for admissions of students and organisation of contact-cum-counselling classes through a network of 100 study centres spread over the entire state of Andhra Pradesh.
3. Material production - responsible for printing, purchases and stores and dispatch of course material, etc.
4. Evaluation - functions as a monitoring and evaluation agency for assessing the effectiveness of the organization of contact-cum-counselling classes offered through multi-media to the students.
5. Audio-visual production and research centre - organises production of radio, audio and video lessons and undertakes research in the field of audio-visual production.
6. In addition to the above, recognising the importance and urgency, a Directorate was established in 1993. This centre would conduct the regional work shops, in different parts of the state for training counsellors and also organise National and International seminars in the field of open education.

It is now pertinent to analyse and evaluate the growth and development of Dr. B. R. Ambedkar Open University in providing increasing access to higher education and issues/problems associated with networking of open education system.

The data pertaining to the students enrollment and degrees awarded are collected from university records and are presented. The information about problems associated with students in open education system is collected on the basis of interviews with about 200 open university students at 10 selected study centres and discussions with concerned authorities of open university at the head office Hyderabad.

Dr.B.R.Ambedkar Open university has a network of 100 study centres spread over the entire state of Andhra Pradesh. The university follows a multimedia approach in instructional methodology such as printed self-instructional material, radio lessons, video lessons, counselling classes etc. Printed course material is the most prominent of all the other modes of instruction. The other modes of instruction are largely supplementary to the print medium.

The enrollment of students, in Dr.B.R.Ambedkar Open University, in undergraduate, postgraduate and the Diploma programmes increased to 59796 in 1993-from 6231 in 1983-84 The enrollment has increased by more than 9 times over a period of 10 years. Around 71,000 candidates appeared for the Eligibility Test in the academic year 1995-96. This is indicative of the potential of wide scale acceptability of open education. So far (up to 1993- 94) 22,802 Degrees and diplomas have been awarded. The details are as follows ;

B.A., B.COM., and B.Sc.	-19,686
PGDPA PGDPR and B.Li Sc	- 2,480
CPFN	- 601
M.Phil., Degrees	- 35
	<u>22,802</u>

The above analysis reveals that Dr.B.R.Ambedkar Open University has been able to provide open access to higher education to a very broad cross section of the people. But the enrollment of students from urban area represents around 70 per cent and from rural area around 30 per cent. This indicates that the University is still not able to provide open access to higher education to all those disadvantaged rural people. It is interesting to note that out of the total degrees awarded, rural people bagged 56 per cent and urban people 44 per cent. In terms of

sex-wise break-up male occupied 59 per cent and female 41 per cent. This indicates that the rural people are more successful than urban people, though the enrollment is lesser. It is easier to transmit knowledge to the people, who are living in remotest areas by organising Mobile Study Centre, rather than transport people to the place of knowledge. This is in tune with the much avowed objective of Dr.B.R.Ambedkar Open University, "i.e., education at your doorstep".

The courses offered by Dr.B.R.Ambedkar Open University are more or less the same ones as offered by conventional/regular universities. In addition to the conventional courses, it is desirable to offer socially relevant and Vocational/Job oriented courses like courses in Communication Technology, Electronics, Computer Application, Agrobased industry courses, Hotel Management, B.Ed., LL.B., etc.

PROBLEMS

Despite the fact that the Open University system has been providing open access to higher education to disadvantaged people, it has encountered several problems. Some of the important problems revealed by a survey are as follows:

1. Most students complain about delay in receipt of course material, non-receipt of course material, receipt of wrong books to right address, right books to wrong address, receipt of wrong memos, receipt of memos with 'A' (Absent) for some papers though candidates may have appeared for all papers, delay in replies/no replies to letters, delay in publication of results, etc. There were instances of students not taking their examinations because they did not receive course material before the commencement of examinations.
2. Most students complained that most of the counsellors were not engaging the allotted contact-cum-counselling classes regularly.
3. Though the audio, radio and video lessons were prepared by concerned subject experts, around ninety five per cent of selected sample students responded that they were not availing of audio, radio and video lessons made available through study centres. Various reasons cited in support of non-use were: Some lessons were not interesting, some were not audible and some were outdated. Another reason was that All India Radio, Hyderabad-B broadcasting radio lessons was not reaching all the corners of the state of Andhra Pradesh.

4. The Syllabus for the first year foundation course in Science and Technology consists of Physics, Chemistry, Zoology, and Botany with respective subject orientation. A counsellor is an expert in one of the above mentioned areas of the course. Students demanded that three or four specialised counsellors be appointed to deal with the four specialised parts of the course. The course is heterogeneous with a bias towards individual subject orientation. It should be more general in nature with current trends. The same is the case with regard to foundation course in Social Sciences.
5. Lack of coordination between universities and directorates within the university was yet another problem faced by distance education in India in general. Dr.B.R.Ambedkar Open University is no exception.
6. Most of the counsellors felt that distance educators require a different set of skills in writing radio, audio and video lessons, etc. Therefore, there is a need for regular Research and Training programmes in open education system at the national level in general and Advanced Foreign Training for central academic staff appointed in open universities, in particular, for the development of academic staff in open education.

Despite the problems mentioned above, the open education system has vast potential for growth in India provided there is a well planned network and co-ordination among universities and Directorates within the university of distance/open education.

NETWORKING SYSTEM

Network is a chain of inter connected system showing the sequence of activities. In a network, though the members of the group are physically separated they work as a unit.

1. Study Centres Network

The popular forms of student support services are: information, advice, guidance and counselling. The British Open University developed a rich structure of student support services which was in many ways the central innovation of the system. The system, providing links between materials and learning, included at least nine interlocking components. These structures came under the control of Regional Centres. The important interlinking components are:

- i) Thirteen Regional Offices providing a decentralized focus for the administration of tuition, counselling and student support systems.
- ii) A study centre within easy travelling distance where the student can meet other students and use facilities.
- iii) Computerised student records.
- iv) A student association with regional branches.

Recognising the importance of having Regional centres, Indira Gandhi National Open University has created 16 Regional Centres with a network of 229 study centres. Yashwant Rao Chavan Maharashtra Open University has set up 6 Regional Centres with 37 study centres. Kota Open University has set up 6 Regional Centres with 24 study centres. Though Dr.B.R.Ambedkar Open University is the first open university in India it lags behind in this respect.

Distance education teaching/learning is viewed as a network of interactions involving the curriculum, methodology, the counsellor the learner and the instructional materials. The University has to sustain a chain of interlined activities, all of which are equal.

The work of various functionaries/Directorates in the system right from the course planning, printing, and despatch of course material to publication of results is often interlinked. Delay at one stage affects the sequence of functions. Therefore, a well-knit mechanism will have to be built-up among various functionaries/Directorates and study centres.

Creation of Regional Centres places focus on decentralisation in administration which strengthens the working of study centres. Regional centres will be responsible for maintaining study centres which organise counselling classes. Each Regional Centre operates its own enquiry and admissions service within its region and these regional centres are the principal source of reliable information for study centres and students.

The communication revolution is fast changing the nature of work and the trend is towards the open education system. To offer better and prompt information services there is an urgent need for the open university to develop a computer/telephone network connecting headquarters with all Regional Centres and all study centres spread over entire Andhra Pradesh. Thus the open education system has to establish a network among central office, Regional offices and study centres to achieve the university's avowed objective. Therefore, it is suggested that though late, Dr.B.R.Ambedkar Open University should create Regional Centres to receive the benefits of decentralisation.

Further, a system of continuous monitoring of Regional Centres and study centres is essential to feed the university with information about day to day problems and progress. For this purpose a separate 'Grievances Directorate' should be established at the head office to look into the various problems of students, study centres and Regional Centres as a whole and report the same to the authorities concerned with concrete suggestions for solving the problems. This Directorate could also act as the Central Enquiry Service, providing information on the full range of open university activities.

2. Institutional Network

Institutional network is a group of people who exchange information and experience for professional or social purposes. It relates to active sharing of academic resources.

A good network mechanism of collaboration among the various open universities and other distance education institutions should be developed to make the optimum use of the available academic resources on no loss no profit basis. Academic resources may be (a) Course material (b) Video cassettes, (c) Audio and Radio Cassettes (d) Any other academically related material.

As knowledge is generated increasingly in open rather than closed institutions, universities have to take the initiative to become part of a network of knowledge institutions.

One important issue that needs to be attended to is the coordination and networking among the distance education centres in courses offered, sharing of materials and academic resources and finally transfer of grades and credits from one centre to another and from one open university to another.

Recognising the importance and benefits of sharing of academic resources, Dr.B.R.Anbedkar Open University has taken the initiative in this direction. The certificate programme in Food and Nutrition, developed by the Indira Gandhi National Open University (IGNOU) in English, has been adopted and traslated into Telugu, the regional language, and Urdu recently. It has also adapted MBA course material of IGNOU with slight changes and launched its own Master of Business Administration programme. This type of formal agreement in sharing academic resources will prove economical in making the optimum use of available academic resources through institutional network.

Organisation and management with more cooperation and coordination of the constituents are more important for efficient running of the network of open education system.

It is not too late to move in the direction of decentralisation of admissions, conduct of examinations, publication of results and interlinking the system to other systems in order to serve the clients better to their satisfaction.

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Staff Development Through Distance Education

5

K. Kuppuswamy Rao

To maintain, let alone improve, the quality of teaching in higher education, regardless of its expansion, there is an urgent need to focus attention on the need to prepare learning packages for staff development and retraining. These learning packages have to be modular in orientation, flexible in design and provide access to a wide spectrum of targeted learners. The Open Universities, using distance education methodologies, have evolved a system which has the potential to create an academic ethos within which the best available talent can be pooled to work as a cohesive course team and produce materials which are self instructional, relevant and up to date. The recent advances in communication technologies have ushered in a new era in support strategies minimising the transactional distance, if not the geographical distance, between the teacher and the learner

INTRODUCTION

However much they differ on other matters, educational planners, educational managers, educational administrators, persons occupying the higher echelons in the educational hierarchy and teachers themselves, unanimously agree that there have to be provisions for professional development, upgradation of knowledge, improvement of skills and retraining activities. What does not receive unanimity is the strategy for achieving these objectives. Different people prescribe different formulae for realising the goals of staff development. For educational administrators and planners, making provisions for study leave, attendance at annual conferences, funding for library books and research journals constitute the fulfilment of their responsibility towards staff development. For many teachers, staff development is equivalent to research in the area of their specialisation, publications in research journals and helping students in their research activities. For other

teachers, staff development is synonymous with excelling in teaching, which is generally measured by the percentage of passes of students in the University examinations and competitive examinations. But in reality, staff development includes all these and much more. Though millions of words have been written about educational planning and staff development for the age of mass education, there seems to be no universally accepted formula to achieve this mythical concept once and for all.

Most of us have vivid memories of our school and college teachers who had a formative influence on us for good or for bad. It was assumed then, that if a teacher had a sound basis in the subject, he would surely be a good teacher. But the extent of poor teaching existing today warrants the conclusion that, though mastery of the subject is a necessary condition to be a good teacher, it is clearly not a sufficient condition. [1]. Now that the governments are committed to policies of democratisation and deelitisation of higher education, a situation has arisen whereby traditional teaching methods which had sufficed, when entry into higher education was highly selective, have been found to be wanting. Today teachers are expected to stimulate learning attitudes in students from across a whole range of abilities and social backgrounds. The present activity of teaching requires a variety of approaches hitherto unthought of.

It has been a constant practice in colleges and Universities to periodically update the subject content and change the curriculum. More often than not, the teachers are neither consulted nor prepared well in advance to cope with the new curriculum. Availability of teachers is taken as an obvious "sine qua non" of successful reform of curriculum. To introduce teachers to new curricula has traditionally been one of the most widespread purposes of in-service training. The customary format has been a short course consisting of some lectures and demonstrations by subject experts. There is no doubt that these in-service training programmes have served and will continue to serve a useful purpose. But they have severe limitations in a rapidly changing environment in which knowledge expansion is fast outstripping one's ability to keep pace with the latest developments. In these days when the governments are looking for ways and means of reducing educational costs and efficient use of available resources, these in-service programmes are becoming too costly with a major portion of money

being spent on travel and subsistence of learners. These programmes take the teachers away from the class rooms and their families. Unless there is a careful selection procedure and direction, the teachers for whom these programmes would be most helpful, would not attend these programmes. The programmes are frequently too short, overloaded, irrelevant to class room situation, too formal and over didactic in style [3]. It is in this context that it is argued that pedagogic staff development is not to be envisaged simplistically as one or two lectures or demonstrations given to reluctant academics who have been cajoled or coerced into unwilling attendance[1].

There have been arguments that incentives - either financial or promotional - would motivate the teachers to willingly take up staff developmental activities seriously. Ramsden [6] offers a timely reminder that effective teachers are self motivating and hence performance related pay and appraisals are demonstrably ineffective as vehicles to enhance the quality of teaching and can only put the quality of student learning at risk. What Ramsden advocates is a provision of an academic environment in which the concern for the quality of teaching is paramount. According to him the prime concern of a teacher should be to instil in the student a love for the subject and a desire to learn the subject for its own sake. Teachers cannot be evaluated solely in relation to student acquisition of serviceable knowledge. In this environment it will be necessary to provide a wide range of individualised learning opportunities that will be made available at times and places to suit every one at all levels [8].

Distance Education

There seems to be a misconception that the word 'distance' in distance education is restricted to only the geographical distance between the student and the source of teaching. Many of the distance students in urban areas live very near to the physical location of study centres or branches from where the study material is mailed. As such they cannot be termed as 'distance students' in the strict sense of the word 'distance'. Rumble [7] interprets 'distance' as the transactional distance which could be viewed as a function of two variables 'Dialogue' and 'Structure'. Dialogue is a measure of the extent to which, in an educational programme learner and educator are able to respond to each other. Structure is a measure of an educational programme's responsiveness to learner's individual needs. Interpreted from this point of view the distance education programmes span a wide spectrum, with self directed

programmes of individual reading at one end and individually tailored tutorial programmes at the other.

Conventional education which is oral and group-based is characterised by formal and class room based instruction where a teacher and a number of students are physically present at the same time and at the same place. In such a situation there is a clear and an almost linear relationship between a teacher and the number of students. This relationship is a primary determinant of cost. In contrast, Distance Education by harnessing the industrialised process of education, supplements the teacher's role by media thereby changing the production function of higher education. By replacing labour costs by capital costs, distance education has given production alternatives to the traditional craft approach of conventional education [4].

On a conservative estimate, by the turn of this century, there will be approximately 250 thousand college and University teachers in the country working in more than 180 Universities and 7000 colleges. The fact that most of the expenditure on higher education has to be met from the public purse, puts an enormous burden on educational planners and administrators to not only justify the expenditure in terms of the quality of output but also on the quality of teachers engaged in producing the output. The National Policy of Education (1986) emphasised the need for providing avenues for improvement of quality and relevance of higher education. Realising the crucial link between quality of higher education and quality of teachers, 48 Academic Staff Colleges were established in different parts of the country in 1987. By June 1992, nearly 42,000 teachers had utilised the facilities offered by the Academic Staff Colleges (ASCS) by attending 1520 programmes offered by them. This is an impressive performance by Academic Staff Colleges in view of the constraints of space, time and finances. These institutions will no doubt continue this good work in years to come. But to cater to the staff development needs of college and University teachers who are very large in number and who are most geographically dispersed, the conventional methods, of face-to-face interaction through lectures, seminars and tutorials alone, are not sufficient. With the phenomenal growth in distance education and the integration of this method into standard education provisions in other countries, it is now no longer possible to think of disseminating knowledge and skills solely in the traditional sense of face-to-face teaching. The recent developments in

communication technology, the growing sophistication in the use of print materials, improved design of instructional materials and reliable provisions of student support services, contributed to the qualitative and quantitative improvement in distance education making even the skeptics grudgingly accept distance education as a second string to the bow. It is now endorsed by one and all that distance education has the necessary wherewithal for providing learning experiences which are largely determined by the learner, and by allowing the learner to choose the time, the place and the circumstances of learning.

Curriculum:

At the very outset it is essential to address oneself as to the inputs that go into the draft of curriculum for staff development. The essential parameters could be Scope, Substance and Balance [3]. Each of the parameters address them selves to the needs of the learners which can be categorised as follows:

SCOPE:

- (i) What knowledge and skills should the teacher be able to demonstrate by the end of the programme ?
- (ii) Which of these accomplishments will enable them to cope as better teachers after their return to the class rooms?
- (iii) How to provide a basis for self directed, future professional development?

SUBSTANCE:

- (i) Which subject matter will best contribute to development of the specified knowledge and skill?
- (ii) Which training techniques will best enable the teachers to apply their knowledge in versatile ways?
- (iii) Which methods of assessment will best reinforce and guide learning?
- (iv) Which institutional and organisational arrangements will best provide an environment conducive to personal and professional growth?

BALANCE

- (i) What is the weightage to be allowed to the various elements of the programme?

- (ii) What is to be the balance between personal study, face-to-face contact, practical activity and research activity?

Having taken into consideration these four factors and finalised the curriculum, there are other factors which are to be carefully attended to before the course writing is attempted. It is an accepted fact that the two basic requirements for success in distance education are producing high quality learning materials and developing easily accessible advisory and support services. The additional factors to be considered are modularisation, adaptation and accreditation [8]. Modularisation refers to the division of the course material into smaller units called modules which can be more easily handled by learners. This allows for an incremental approach to learning by attaining limited objectives with each module. These modules will have a component of print material a provision for face to face interaction and a component of media support. The choice of media has to be dictated by accessibility, convenience, academic control and human touch. Adaptation refers to a more efficient use of resources when the materials designed for one purpose are modified for use in the other. Accreditation is the degree of recognition given for participation in the professional development programmes.

The University Grants Commission, evolved guidelines based on these and similar considerations for the ASCS. The actual formulation and implementation details, were left to the University and the Academic Staff College concerned. The curriculum for the orientation programme was to be covered in four components: (A) Awareness of linkages between education, society and economy; (B) Philosophy of education; (C) Subject upgradation and (D) Management and personality development. However, when put into practice each of these components has been interpreted differently by different Academic Staff Colleges. Even in weightages given to the four components there have been very wide variations from one Academic Staff College to the other. The author is aware of situations where in some ASCs, the component C is completely dropped. Even in the ASCs where the component C is included, the contents depend on the availability of resource persons and the interests of the available resource persons. No wonder it is observed that the efforts to improve the quality of teaching through the ASCS proved to be too costly and failed to reach anywhere near the number of lecturers envisaged [5]. This problem compounds itself if we

observe that most of the teachers possess a virtual life time tenure when compared to the student population which is replaced once every two or three years.

It is in this background that distance education would come to the rescue of the existing system if staff development is envisaged in a mixed mode by utilising the tested methodologies to circumvent the barriers of time and space. The economies of scale would reduce the per capita expenditure on the learner thereby making staff development a cost effective instrument to achieve its goals.

CONCLUSION

Universities and colleges differ significantly from many other forms of organisations. They are multipurpose organisations undertaking teaching, research and public service. It is extremely difficult to separate the contributions made to each purpose let alone measure the out puts in meaningful terms. Unless the teachers are given opportunities to constantly update their knowledge and skills they are likely to lack confidence and ability in undertaking activities other than those which involve familiar and safe teaching routines. Unless the learning experiences are organised so as to make linkages between theory and practice explicit, the teachers may not be able to demonstrate a holistic understanding and application of appropriate practical skills. Taking into consideration the large numbers and the geographical spread of the teachers, any activity of staff development and retraining can not achieve the desired objectives unless the traditional methods are supplemented by industrialised teaching methods based on objectivised, rationalised and technologically based interaction. This is only possible when the distance education methodologies are exploited to the fullest advantage. Reflection on the experiences of the existing system of imparting staff development through Academic Staff Colleges will show that there will not be even a remote chance of aiming at achieving the desired results unless there is a change in attitudes and willingness by traditional providers to adopt more flexible policies and more creative practices envisaged by distance educators.

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Staff Development in Distance Education: Some Concerns

6

C. Pushpa Ramakrishna

Staff Development is an area which is receiving greater focus today both in education and in the corporate sector. Distance Education similarly is growing as a new field of interest. The combination of the two, that is staff development in distance education, therefore, is an area that needs considered attention.

The role of staff development in quality assurance and quality maintenance is crucial. This is particularly so in open universities which have large and diverse operations but do not possess more than a core group of full-time staff. There is a heavy dependence on part-time personnel of different categories for effective functioning. Development of human resources in distance education institutions thus assumes significant proportions.

Staff development may itself involve different functions such as updating knowledge, training in skills or even bringing about an attitudinal change. The strategies to be used for human resource development should accordingly adapt themselves to the requirement of the client and the commissioning agency or institution. Under the circumstances, following a strictly unilateral or unidirectional strategy may not produce the desired effect.

One caution, however, needs to be given. Staff Development should not be perceived as a panacea for all ills (Lewis, 1995). It is not uncommon to hear this comment in different circles, "We need some staff development" as if all problems, whether related to staffing, organisational lapses, or unimaginative planning can be resolved by staff development. It should be clarified that staff development can only be an option after a clear analysis has been made of the organisational context and it has been determined that the limitations or shortcomings arise from human factors such as attitudinal prejudices, dated knowledge

bases or inadequate skills. The organisation can benefit from staff development only in such circumstances. Before examining the critical concerns for staff development in distance education, let us review the contexts within which training is required and the strategies which are in use.

The management systems in the open university type of institution can be divided broadly into the following sub-systems(Paul,1990):

- * academic
- * industrial
- * administrative

The academic sub-system

This unit engages the staff for two main functions: course preparation, and course dissemination. It includes staff who prepare course material, the library and evaluation and research divisions. The course dissemination aspect is taken care of by the staff who organise the student support services and undertake tutoring and counselling.

The industrial sub-system

This looks after the production and distribution of the print materials, and includes staff who work as in publishing houses or in audio-video production units. Computer-assisted learning systems and its programmers, analysts and operators would also fall into this category. For the distribution of the materials, this sub-system employs warehouse staff and staff for despatching materials.

The administrative sub-system

Like the other two sub-systems, this has more than one function. This department runs the other divisions or branches, facilitating their smooth functioning by laying down rules for governance, finance, public relations, etc. As part of general governance, the institution also needs staff who evaluate the system, supervising its operations.

Such, then, are the general staffing requirements of a single mode institution. The human resource development activities would essentially have to conform to the requirements of different sub-systems. In response to the changed contexts different strategies may be employed;

(i) Power-coercive top-down strategies for staff development

The institutional perspectives to staff development focus upon information-giving and skill development in relation to the three

sub-systems. While the mode is convenient to organise, it may not result in completely satisfactory outcomes.

(ii) Individual contributions: the rational-empirical approach

This strategy becomes operative through the dissemination of information and by a sharing of ideas. Compared with the power coercive top-down approach this strategy works laterally. Innovation comes from interaction with peers who have either tested the positive features of the change or perceive its logical advantages in particular contexts. The process facilitates learning and accepts innovative measures more readily than the top-down approach but is rather long drawn out and time consuming. There is also the danger of the innovative features getting diffused and weakened in the process, unless adequately supported by the other two strategies.

(iii) Contextual influence: the normative reeducative strategy

As opposed to the earlier two strategies, a third, the normative reeducative one is most useful because it results from a realisation of needs and a desire to respond positively by the trainee. The approach is marked by its collaborative problem solving features and functions from within the target group. It is characterised by the agents' openness to innovation and willingness to change. The degree of resistance to change is low and the clients voluntarily take on the commitment to change.

An eclectic approach which mixes all the strategies judiciously is necessary as also an attempt to include different modes of training such as the print, audio and video.

Institutional Responsibilities

Indian Distance teaching institutions have been quick to perceive the need for promoting staff development activities and providing intensive short term training to their personnel. At the Indira Gandhi National Open University the staff development activity is taken up primarily by the Staff Training and Research Institute for Distance Education (STRIDE) through its Diploma and Master's level programmes in Distance Education in addition to the intensive Workshops/Programmes arranged under the Regional Services Division. Dr.B.R.Ambedkar Open University has an exclusive Centre for Staff Training and Development to look after the training functions. Some questions that come to mind in this context are

- * what purpose is training to serve?
- * is it programme specific or generic?
- * is feedback collected from the training sessions?
- * what use is made of the feedback so gathered?
- * is performance evaluation undertaken?
- * are systems improved/personnel functions bettered as a result of the training ?

The nagging concern at this stage is that there is perhaps very little use that is made of the feedback received. The staff development role which is, one must remember, a part of the entire organisational system is not an operational one for change. The institutional executives are empowered to implement change by developing upon the insights gained. Are we then saying that no change takes place as a result of staff development? No, the significance of the activities can only be gauged in long range effects. To the organisation the benefit is manifold. The individual competencies of staff are developed, the collective effort becomes more focussed and the feedback brings about changes in the operating systems and organisational culture.

Individual commitment and the effort to improve

In all change the effort of the individual is foremost. Without the urge for self-improvement and self-development the trainee would remain passive and unable to assimilate or transfer his learning or training for any useful change. This factor, as mentioned earlier, is all the more relevant in distance teaching contexts where conventional approaches and practices need to be set aside or modified for optimum benefit to all concerned. The openness to change and the willingness to improve can themselves help the trainee to forge ahead and often initiate strategies that become relevant and useful.

Conclusion

The concerns about staff development in distance education that this paper has raised can briefly be summarised as the need for

- * clarity of purpose in taking up the staff development task;
- * awareness about the extensive range of operations;
- * openness in adopting modes of training;
- * judicious use of strategies;
- * institutional responsibilities; and

* individual commitment and the effort to improve.

Without attention to these factors staff development efforts can be self defeating.

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Management Education in Open University System - Role Of Educational Technology

7

V. Venkaiah

The present paper outlines the growing importance of management education through distance mode in India and abroad. The following are the broad objectives of this paper.

- i) To examine the role of Open Universities in imparting management education in select countries;
- ii) To discuss the role of audio-video software in the learning process;
- iii) To suggest appropriate communication technologies to suit the needs of distance learners in developing countries;
- iv) To analyse the implications of use and limitations of new technologies considering the funding constraints of Open Universities in India; and
- v) To suggest certain policy measures for effective use of multimedia instructional strategies by Open Universities in India.

MANAGEMENT EDUCATION IN INDIA-AN OVERVIEW

Management Education is about forty years old in India. The first management education programme was launched by the Indian Institute of Social Welfare and Business Management in Calcutta in 1954 which was followed by management programmes in four Universities namely - Andhra University, Bombay University, Delhi University and the University of Madras. Initially, management programmes were designed for part-time study for working executives.

There was a major breakthrough in management education in India in the 1960s with the establishment of the Indian Institute of Management at Calcutta(1961) and at Ahmedabad(1962). Following the establishment of the Indian Institutes of Management and St.Xavier's Labor Relations Institute in 1966, Delhi University and Bombay University also launched full-time MBA programmes. A number of Universities emulated the

example and introduced programmes leading to the MBA and Diploma in functional areas of management.

The growth of management schools was considerable during the decade 1981-1990 with fifty new management schools being added among which 50% were in the private sector. The expansion of management education from 1990 has been very significant. The total number of Management Schools recognised by the AICTE by December 1994 was over 300 enrolling about 27,000 students every year for different Management programmes in the country.

One of the recent trends in management education in India is that the Distance Education System has been recognised as an important alternative for providing management education. At present four Open Universities - one national Open University (IGNOU) and three State Universities namely : Dr.BRAOU, YCMOU, and KOU offer management programmes leading either to the MBA or P.G.Diploma in Management in addition to some Correspondence Institutes of conventional Universities. The Indira Gandhi National Open University was the first Open University to launch management programmes in India. It started a Diploma in Management in 1987, an Advanced Diploma in Management in 1988, and Specialised Diplomas in functional areas of management in 1989 and MBA in 1991. Dr.B.R.Ambedkar Open University launched its MBA in 1993. It is also launching two postgraduate diploma programmes in the areas of marketing and business finance in 1995. While YCMOU started its MBA programme in 1994, KOU started Management Diploma Programme in 1994. The total number of students enrolled every year in these four Open Universities is about 25,000 which means that the Open Universities provide management education to an equal number of students as conventional Universities. The recent economic reforms and globalisation policies have been placing greater demands on managers of business and non-business enterprises thereby redefining the role of Open Universities as alternative channels of management education.

MANAGEMENT EDUCATION THROUGH THE DISTANCE MODE : AN INTERNATIONAL PERSPECTIVE

A review of management education through the distance mode reveals that it has become popular during the 1980s in different countries. (See Annexure I). It may be observed from the Annexure that both

Bachelor's Degree as well as Master's Degree are offered by the distance education institutions. The media used for management education by different distance education institutions reveal that almost all the institutions use print, audio and video cassettes and broadcasts over TV and Radio. The important institutions offering management education through the distance mode are the Open Business School, Open University UK; The Open College, Hongkong; Athabasca University, Canada; University of Strathclyde, UK; Henley Distance Learning, UK; Deakin University, Australia; Australian Society of Accountants, Australia; NKS School of Management, Norway; Allama Iqbal Open University, Pakistan; and Indira Gandhi National Open University and State Open Universities, India.

COMMUNICATION TECHNOLOGIES IN DISTANCE EDUCATION

The use of modern communication technologies in the distance mode of teaching has been gaining momentum in India in recent years. Many experiments have been carried out using communication technologies for educational purposes under the Satellite instruction TV programmes of the Government of India. Under the INSAT Education Project, six institutes of educational technology have been established as a result of experiments carried out under the development of communications scheme. INSAT is also being used for educational purposes at the tertiary level by UGC under the country-wide classroom programme.

In the modern education system, particularly in the Open University system, the media have brought in a revolution with the communication satellites proving to be a most promising technology available to promote and strengthen the (Open University) system. The potential use of communication technologies is slowly entering private communication organisations to impart education. Lower costs due to new technologies make it possible to use satellites for delivery of educational packages. A new development which is taking place in educational communication is the multi-media approach for imparting education. This is because electronic media devices are not only capable of overcoming the barrier that distance education presents but also change the very nature of the instructional process. Thus, a variety of electronic devices are gaining greater importance in the process of learning. The chief media used in

distance education are : TV, Radio, Audio and Video Tapes, Teleconferencing, Cable Television, Fascimile, Electronic Mail, Computers, etc. With the help of media devices, it has become possible to maintain standards and provide quality education. Effectiveness, a broader perspective and cost- efficiency are the factors that encourage the wider use of media in the instructional methodology of distance education.

APPLICATION OF EDUCATIONAL TECHNOLOGY TO MANAGEMENT EDUCATION

The fast developments taking place in communication technology have led to an increasing application of educational technology in the area of management education too. In the Indian context the application of educational technology is basically limited to radio and television in a broad sense. This is because of the accessibility and affordability of the media for learners. Computer-aided learning has also gained importance since 1990. But as far as the application of educational technology to distance education is concerned, the Indian Open Universities use the broadcast/ telecast media and audio and video tapes for instructional purposes in addition to the print medium. One major drawback, however, is the limited availability of T.V. and radio broadcast time for educational purposes, since a major chunk of radio and T.V. time is allocated for commercial and entertainment purposes by the Government owned mass media.

The following media are used significantly in the instructional design of management education in Open Universities.

i) Radio Broadcast

Radio is one of the most powerful and cheapest media for transfer of information which is used effectively in management education. Here again, the often heard complaint from distance learners is that the broadcast time is very limited. A majority of the students have expressed the view that the time slots of radio broadcasts are not convenient for them since these broadcasts are either in the early hours of the day or late at night.

ii) Television

Television is another widely used mass communication device because of its strong audio-visual impact. Television makes it possible

to update oneself regarding new technologies, new economic policies, international business practices, etc. Television could be used effectively:

- To introduce the concepts of management in an easily understandable manner;
- To equip management students with specialised knowledge in management and business issues; and
- To enable students develop skills of critical analysis and decision-making to resolve complex managerial problems with the help of case studies.

iii) Audio Tapes

In recent times educational materials have been made available on audio cassettes making them popular. The cost-effectiveness of both production and software development and easy accessibility to the learner are mainly responsible for this popularity. Moreover the learner has the freedom to operate the cassette in the way he wants. A large number of audio cassettes are now available on management systems, procedures and practices of excellent organisations.

iv) Video Tapes

Video tapes have a great potential to be used for educational purposes. Video tapes can be used flexibly by learners because of replay facility. The video equipment is also affordable. Open Universities can supply video equipment to the local study centres and make video lessons accessible to learners at the study centres. For example, IGNOU and Dr.B.R.Ambedkar Open University have provided video hardware and software at their study centres and many lessons related to management courses are made available at all the study centres for the benefit of management students.

v) Radiovision

This is also a useful non-broadcast learning device. It is an integrated whole of both vision and audio. It plays an effective complementary role to the print medium. Radio vision enables students to look at the visuals which are presented on the screen through slide projectors, charts, models, graphs, flow-charts, etc., and listen to the explanations which are given through the audio cassettes. Further, the pace of audio and visual components could easily be harmonised with the pace of comprehension of the learners (Sharma:1988). This device

is very useful in teaching certain management courses like Quantitative Techniques, Accounting and Finance, Computer Applications, Decision Analysis, Operations Research, etc. But this device is used to a very limited extent. It is necessary to explore the utility of radiovision in our country.

vi) Teleconferencing

Teleconferencing is one of the recent developments in India in which technology is used for communicating with students at different places, to interact through media, or to undertake group discussions through telephones. After listening to a Video/Audio lecture in a Study Centre, the students ask questions via satellite for responses from the expert teacher who is located at a distance (even a few thousands kilometers away) from the student. Students at all the study centres can watch and hear this interaction, just as they do in a normal classroom situation. At present, teleconferencing is organised in India using the one-way-video and two-way-audio mode. Though it is technically feasible to have two-way-video interaction, the present costs make it difficult for the Indian distance education institutions to adopt this mode. IGNOU is organising teleconferencing (one-way video and two-way audio) for students of different courses. Teleconferencing could be utilised as an effective medium for imparting Management Education because of its distinct advantages.

vii) Satellite Broadcast

In the last three years the satellite communication system has been gaining importance in India particularly for broadcasting purposes. A number of private satellite channels have come into existence like Star TV, Zee TV, Sun TV, Gemini TV, Eenadu TV, etc. Hiring of these satellite channels by private entrepreneurs is pointing the direction towards commercial utilisation of the time available on these satellite channels. The private channels are concerned more with commercial rather than educational programmes. However, some educational programmes are also being telecast through the satellite communication channels. For example, Zee TV telecasts computer awareness programmes, management education programmes, business reports, etc.

TECHNOLOGY USE IN DISTANCE EDUCATION - POLICY DIRECTIONS

While considering the background development of communication technology and applications of educational technology in the open education system, certain issues discussed above need to be addressed. The following policy measures could be initiated for optimal use of technology in the open education system.

1. As recommended by the CABE Committee(CABE Committee Report:1994), experimentation with new technological systems/developments must be promoted with an eye on the future and in keeping with the technical skill and advanced infrastructure available in the country.
2. Open Universities and Institutions of distance learning(including the Correspondence Institutes of Conventional Universities) must be encouraged to make greater use of communication technology. This may be done by providing funds, facilities and technical expertise.
3. In the case of professional courses like management, the use of technologies should not be limited only to the materials produced by a single institution. There are a number of opportunities which can be used by the learners. The Open Universities should adopt a policy of pooling and sharing of audio-video resources by networking arrangements. The recent example in this direction is teleconferencing organised by IGNOU which is beneficial to the distance learners of different Open Universities in the country.
4. Appropriate Technology i.e., the technology which conforms and responds to the perceptions of the learner should be promoted. Applications of educational technology should consider the profiles of the learners on the basis of region, socio-economic background etc.
5. Since acquiring hardware is not difficult in the Indian context, measures should be taken to make available the required software. This requires training manpower particularly teachers of distance education and production staff of audio-video materials.
6. Making available a separate educational broadcast channel especially for the IGNOU and State Open University.

7. Promoting use of audio cassettes and radiovision in the Open University system.

Conclusion

The growing management education needs in India in the context of liberalisation and globalisation could be met through the distance mode. To provide necessary inputs to professional courses like management and to maintain quality and standards, the role of educational technology is very vital. It is necessary for the policy makers of distance education institutions to choose appropriate technology which should match the profiles of the learners and the local study centre infrastructure. It is necessary to realise that the technologies used in advanced countries cannot be adopted in India. There is a need to develop a judicious mix of media for making it accessible and affordable to the learners. The emphasis should be laid on the use of Radio, T.V. Audio and Video Tapes, Radiovision and teleconferencing. It is necessary for the Central and State Governments to promote experiments on new technological systems keeping in view the infrastructure and the skills and expertise available in the country.

ANNEXURE-I

MANAGEMENT PROGRAMMES THROUGH DISTANCE MODE IN SOME COUNTRIES

Sl. No.	Institution	Year of launch- ing edu- cation course for mana- gers	Qualifications Awarded
1	2	3	4
1.	Athabasca University, Canada	1979	B. Admin
2.	Deakin University, Australia	1981	MBA
3.	University of Strathclyde Scotland, UK	1983	MBA
4.	Henley Management College	1983	—

Management Education in Open University System

1	2	3	4
5.	Open Business School, The Open University	1983	Dip BA
6.	The Open College, Hong Kong	1983	BBA
7.	Australian Society of Accountants, Australia	1985	Associate (AASA) Certified Practising Accountant (CPA) Public Practice Certificate (PPC)
8.	Norsk Konespondanseskole, Norway	1980	Public Certificate (Managerial Economist)
9.	Allama Iqbal Open University Pakistan	1984	Dip. in Management / MBA
10.	Indira Gandhi National Open University, India	1987/91	Dip. in Management / MBA
11.	Dr. B.R. Ambedkar Open University, Andhra Pradesh, India	1993	MBA
12.	Yaswantharao Chauhan Maharashtra Open University, YCMOU, Maharashtra, India	1994	MBA
13.	Kota Open University, Rajasthan, India	1994	Dip. in Management

Source: i) Distance Education for Managers : An International perspective; Open Learning, June, 1986, P.40; and
 ii) Prospectuses of Management Programmes of Indian Open Universities.

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Spatial Distribution of Women Students : Impact of the System on Women

8

Vijayalakshmi Pandit

The major programme offered in Dr.B.R.Ambedkar Open University is the Undergraduate programme (B.A.,B.Com,B.Sc). Since 1991 about 30,000 to 40,000 of students have been enrolling in undergraduate programmes every year. Women constitute about 30 percent of the total enrollment in U.G. Courses.

This paper makes an attempt -

1. to draw a profile of the women students of Undergraduate programme of Dr.B.R.Ambedkar Open University and
2. to analyse the pattern of spatial distribution of women students of Dr.B.R.Ambedkar Open University in the three different regions and districts of the state of Andhra Pradesh.

The profile of women learners reveals the impact of Dr.B.R.Ambedkar Open University on adult women in terms of age, marital status, social-status, occupational status and formal and nonformal stream etc.

The spatial distribution of women learners in the state of Andhra Pradesh might reveal factors that influence their participation in or access to higher education.

FORMAL AND NON-FORMAL STREAM OF U.G. PROGRAMME

The students admitted to undergraduate programmes are drawn from both formal and non-formal streams. Persons who have completed 10+2 of formal education are given direct admission to B.A., B.Com. and B.Sc. degree courses. On open admission policy persons without any basic qualifications are given admission into undergraduate course provided they pass the Eligibility Test conducted by the University. The students in the case of non- formal stream should have completed 20 years of age. This age limit has been reduced to 18 yrs. from the year

1995. More than three-fourths of the undergraduate students are from non-formal stream, which indicates that Dr.B.R.A.O.U is fulfilling the objectives of providing access to those people who are denied access to regular institutions of higher education. Students from formal stream constitute around one fourth of the total number enrolled (Table-1).

TABLE-1
FORMAL AND NON-FORMAL STREAMS

Academic Year	Formal	Non-formal	Total
1983-84	2181(35%)	4050(65%)	6231(100%)
1984-85	1717(15%)	9527(85%)	11244(100%)
1985-86	2518(16%)	13184(84%)	15702(100%)
1986-87	5081(26%)	14190(74%)	19271(100%)
1987-88	3058(18%)	13247(82%)	16305(100%)
1988-89	4101(24%)	12757(76%)	16718(100%)
1989-90	5656(34.5%)	10746(65.5%)	16402(100%)
1990-91	7880(29%)	19566(71%)	27446(100%)
1991-92	5564(17%)	26879(85%)	32443(100%)

Source : Centre for Evaluation, Dr. BRAOU.

PROFILE OF WOMEN UNDERGRADUATE STUDENTS:-

Women from Non-formal stream: Among the candidates who appeared for eligibility test the percentage of female students is about 27. There has been a gradual drop in the percentage of female candidates appearing for eligibility tests. In the academic year 1985, the percentage of women candidates who appeared for E.T. was 27.22% and in 1990 it was 23.15% that is a 4% drop, which is phenomenal. The percentage of males appearing for E.T increased by about 4% from 1985 (72.78%) to 1990 (76.95%). In spite of the increase in absolute number of students appearing for E.T. (in 1985, 150996 in 1990, 24009) i.e., to the extent of 19,000 there is a gradual decrease in the number of women appearing for the Eligibility Test. It is quite disappointing to note that despite the

Spatial Distribution of Women Students

opportunity of open access without any restriction of basic qualifications for admission to undergraduate programmes the response from women candidates is not encouraging. The percentage of women candidates who passed the Eligibility Test remained between 24 to 30% (Table-2).

TABLE 2
DISTRIBUTION OF E.T.PASSED CANDIDATES BY GENDER

E.T.Years	Men	Women	Total
1985	10916 (72.30%)	4183 (27.70%)	15099 (100%)
1986	12482 (72.87%)	4647 (27.13%)	17129 (100%)
1987	11624 (71.66%)	4598 (28.34%)	15195 (100%)
1988	10588 (69.68%)	4607 (30.32%)	15195 (100%)
1989	9818 (72.12%)	3795 (27.88%)	13613 (100%)
1990	18046 (75.16%)	5963 (24.84%)	24009 (100%)

Source : Centre for Evaluation, Dr. BRAOU.

In spite of the phenomenal drop (4%) in women appearing for the E.T. at entry point, the performance of women students during all the years is commendable when compared to the performance of men students. The difference in pass percentage of female students over male students was initially as low as 1.49% (1985). By 1990 it reached 5.56% (Table-3).

TABLE-3
STUDENTS' PASS PERCENTAGE IN ELIGIBILITY TEST

Year	Male			Female			Difference in
	App- eared	Passed	%age	App- eared	Passed	%age	per- centage of pass
1985	18003	10916	60.63	6733	4183	62.12	1.49
1986	23003	12481	54.25	7686	4647	60.46	6.21
1987	20479	11624	56.76	7105	4598	64.71	7.95
1988	21981	10588	48.26	7326	4607	62.88	14.62
1989	27768	9818	35.35	7958	3795	47.68	12.33
1990	33431	18046	53.97	10016	5963	59.63	5.56

Source : Centre for Evaluation, Dr. BRAOU.

If we examine the overall enrolment of women learners in U.G.Courses in Dr.B.R.Ambedkar Open University from 1983-84 to 1992-93, (table 4), there is a gradual increase in the percentage of female students from 1983-84 to 1987-88. The percentage of female students was 31, unchanged for three consecutive years which suddenly dropped to 27% in 1991 and further dropped to 26% in 1992-93. The drop of 6% in the female enrolment in U.G courses is phenomenal which needs careful examination.

TABLE-4
DISTRIBUTION OF UNDERGRADUATE STUDENTS ON
THE BASIS OF SEX

Academic Year	Male	Female	Total
1	2	3	4
1983-84	5296	935	6231
	(85%)	(15%)	(100%)
1984-85	8387	2857	11244
	(75%)	(25%)	(100%)

Spatial Distribution of Women Students

1	2	3	4
1985-86	11291 (72%)	4411 (28%)	15702 (100%)
1986-87	13762 (69%)	5509 (31%)	19271 (100%)
1987-88	11295 (69%)	5010 (31%)	16305 (100%)
1988-89	11499 (69%)	5219 (31%)	16718 (100%)
1989-90	11374 (69%)	5048 (31%)	16422 (100%)
1990-91	19978 (73%)	7518 (27%)	27496 (100%)
1991-92	23739 (73%)	8708 (27%)	32447 (100%)
1992-93	26332 (74%)	9181 (26%)	35513 (100%)

Source : Centre for Evaluation, Dr. BRAOU.

OCCUPATIONAL STATUS OF WOMEN LEARNERS:

Regarding the occupation of female students, the data shows (table 5) that unemployed women learners range between 70 to 85 percent. A small percentage of them are teachers and public sector employees and a few are manual workers. This indicates that all these sections of women i.e. housewives, teachers, public sector employees and manual workers have opted for distance education willingly, as it is a need for them or suits their lifestyle since adult women are otherwise busy with household responsibilities, children and employment etc. Higher educational opportunities on part- time basis and through open admission policy is necessary for providing access to more women. Access to education is the pre-requisite for the social, economic and political empowerment of women.

TABLE-5
DISTRIBUTION OF U.G.STUDENTS BY OCCUPATION:
FEMALE

Aca- demic Year	Un- emp- loyed House- wives	Manual Workers	Public Emp- loyees	Teachers	Others	Total
1983-84	640 (68%)	4 (0.5%)	97 (11%)	102 (11%)	92 (10%)	935 (100%)
1984-85	1419 (49%)	27 (1%)	418 (15%)	325 (11%)	668 (24%)	2857 (100%)
1985-86	3511 (79%)	2 (0.5%)	317 (7%)	389 (8%)	242 (5%)	4411 (100%)
1986-87	4807 (86%)	12 (0.2%)	245 (4%)	277 (5%)	173 (3%)	5509 (100%)
1987-88	4308 (86%)	15 (0.3%)	178 (3.5%)	287 (5%)	272 (5%)	5010 (100%)
1988-89	4610 (88%)	22 (0.4%)	215 (4%)	259 (5%)	113 (2%)	5219 (100%)
1989-90	4406 (88%)	13 (0.3%)	100 (2%)	188 (3.7%)	329 (6%)	5036 (100%)
1990-91	6618 (88%)	31 (0.4%)	145 (1.9%)	236 (3.1%)	488 (6.5%)	7518 (100%)
1991-92	7431 (85%)	43 (0.5%)	174 (2%)	229 (2.6%)	831 (9.5%)	8708 (100%)
1992-93	7650 (83%)	54 (0.5%)	89 (0.97%)	164 (1.8%)	1224 (13.3%)	9181 (100%)

Source : Centre for Evaluation, Dr. BRAOU.

TABLE-6
DISTRIBUTION OF WOMEN LEARNERS BY AGE

Academic Year	Above 20	21to25	26to30	31to35	36to40	41to45	46to50	Above50	Not-available	Total
1988-89	597 (11.17%)	204 (3.81%)	108 (2.02%)	61 (1.14%)	20 (0.37%)	8 (0.14%)	Nil	Nil	34 (0.64%)	5346 (100%)
1989-90	976 (19.33%)	2318 (45.92%)	858 (16.99%)	481 (9.52%)	232 (4.59%)	81 (1.60%)	25 (0.49%)	5 (0.09%)	72 (1.43%)	5048 (100%)
1990-91	1379 (18.34%)	1582 (21.04%)	626 (8.32%)	307 (4.08%)	154 (2.04%)	64 (0.85%)	16 (0.21%)	4 (0.05%)	3386 (45.03%)	7518 (100%)
1991-92	2231 (25.62%)	3793 (43.56%)	1330 (15.27%)	702 (8.06%)	363 (4.16%)	123 (1.41%)	36 (0.41%)	12 (0.13%)	118 (1.35%)	8708 (100%)
1992-93	2606 (28.38%)	3886 (42.32%)	1347 (14.67%)	687 (7.48%)	339 (3.69%)	133 (1.44%)	37 (0.40%)	2 (0.02%)	144 (1.57%)	9181 (100%)
1993-94	2346 (28.97%)	3572 (44.11%)	1130 (13.95%)	558 (6.89%)	255 (3.14%)	92 (1.13%)	26 (0.32%)	10 (0.12%)	108 (1.33%)	8097 (100%)

Source: Centre for Evaluation, Dr. BRAOU.

AGE-WISE DISTRIBUTION OF WOMEN LEARNERS:

A majority of women learners are between 20 to 25 years of age which constitutes about 75%, between 26 to 30 years about 15%, 31 to 40 years are about 11%, the rest i.e., from 41 to 45 constitute 1% and above 50 years the representation is negligible i.e. 0.1 (table 6). The percentage of the younger generation of women is increasing gradually. As the age limit for Eligibility Test has been reduced to 18 years, for non-formal stream, a larger number of women of younger generation could get the opportunity for higher education in Dr.B.R.Ambedkar Open University.

MARITAL STATUS OF WOMEN LEARNERS:

TABLE-7

MARITAL STATUS OF WOMEN LEARNERS

Academic year	Married	Unmarried	Widowed	Total
1988-89	3036 (56.79%)	2309 (43.19%)	1 (0.018%)	54346 (100%)
1989-90	2716 (53.8%)	2332 (46.19%)	0	5048 (100%)
1990-91	2324 (30.91%)	5193 (69.07%)	1 (0.13%)	7518 (100%)
1991-92	4522 (51.93%)	4186 (48.07%)	0	8708 (100%)
1992-93	4322 (47.08%)	4859 (52.92%)	0	9181 (100%)
1993-94	3797 (46.89%)	4300 (53.11%)	0	8097 (100%)

Source: Centre for Evaluation, Dr. BRAOU.

The percentage of married women is more than 60% in the initial years and it has been gradually decreasing. The data presented in the Table-7 from 1988-89 to 1993-94 academic years reveal that the percentage of unmarried women is increasing gradually. This indicates

that women of younger generation are getting attracted towards the Distance Education system. There is going to be a spurt in the number of unmarried women during 1995 as the age limit has been reduced to 18 years for non-formal stream, from 1995.

SOCIAL STATUS OF WOMEN LEARNERS:

The data presented in the (Table-8) reveal that a majority of the women availing the opportunities provided, are from the 'Other Category' (O.C.), followed by Backward Castes (B.C.), Scheduled Caste (S.C.) lastly Scheduled Tribe (S.T.). One welcoming observation is that there has been a gradual increase in the enrolment of women from B.C., S.C. and S.T. community. By 1993-94 the increase has been 6.38% in the case of Backward Caste women, 4.13% in the case of scheduled caste women and 0.41% in the case of the women from scheduled tribes. This low enrollment in S.C and S.T communities is partly due to the low female literacy to which attention has to be paid.

TABLE-8
SOCIAL STATUS OF WOMEN LEARNERS

Academic Year	Social Status				Total
	B.C.	S.C.	S.T.	O.C.	
1988-89	1345 (25.16%)	412 (7.71%)	41 (0.76%)	3548 (66.37%)	5346 (100%)
1989-90	1278 (25.32%)	360 (7.13%)	31 (0.61%)	3379 (66.94%)	5048 (100%)
1990-91	2066 (27.48%)	709 (9.43%)	78 (1.04%)	4666 (62.05%)	7518 (100%)
1991-92	2440 (28.02%)	871 (10.0%)	81 (0.93%)	5316 (61.05%)	8708 (100%)
1992-93	2658 (28.95%)	952 (10.38%)	101 (1.10%)	5469 (59.69%)	9181 (100%)
1993-94	2550 (31.49%)	959 (11.84%)	95 (1.17%)	4473 (55.49%)	8097 (100%)

Source: Centre for Evaluation, Dr. BRAOU.

SPATIAL (REGION-WISE) DISTRIBUTION OF FEMALE UNDERGRADUATE STUDENTS OF DR. B.R.A.O.U

Table-9 gives the region-wise distribution of male and female undergraduate students for 5 academic years i.e from 1988-1994.

a. Andhra Region

Percentage of female enrolment in Andhra Region was between 30 to 31, next to the Twin cities which was between 32 to 40. This may be due to the high female literacy rate and learning culture prevailing in the Twin cities region. However the female student enrolment in the last five years has been static. In Andhra even after 5 years, the difference in total female enrolment has only been 211 in spite of 29 study centres in Andhra Region (Table 9).

b. Rayalaseema

In Rayalaseema there has been a quantum jump in female enrolment from 635 in 1988 to 1747 in 1993, the difference being 1112. Though the female enrolment was low in the beginning it has increased phenomenally in subsequent academic years. Rayalaseema region stood next to Andhra in female enrolment rates (Table-9).

c. Telangana

In Telangana, the total number of female students enrolled in 1992-93 was 2826 (20%) as against 1337 (31%) in Andhra with equal number of study centres i.e., 29. Telangana region is lagging behind in female enrolment rates when compared to Andhra and Rayalaseema. To some extent this is due to the low female literacy rates in Telangana region compared to the other two regions of Andhra Pradesh. Among the Telangana districts Mahabubnagar, Medak and Adilabad have the lowest female literacy rates 18.13%, 19.25% and 20.60% respectively, the lowest among the 23 districts of Andhra Pradesh. (Tables -9&10)

DISTRICT-WISE FEMALE ENROLMENT IN THREE REGIONS OF ANDHRA PRADESH

Andhra: In Andhra Region the female enrolment is the highest in Krishna district (39%) followed by Guntur (36%) and Nellore (29%) and East Godavari (29%). However in total enrolment Nellore is the highest with 1182 students in the year 1993. Prakasam, Srikakulam, Vizianagaram and East Godavari districts show a meagre increase in

TABLE - 9
SPATIAL (REGION WISE) DISTRIBUTION OF U.G. COURSE STUDENTS BY GENDER

Academic Year	Andhra Region			Rayalaseema			Telangana			Twin Cities		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1988-89	2490 (69%)	1126 (31%)	3616 (100%)	1868 (75%)	635 (25%)	2503 (100%)	3636 (74%)	1249 (26%)	4885 (100%)	3509 (60%)	2336 (40%)	5845 (100%)
1989-90	2350 (70%)	1030 (30%)	3380 (100%)	1968 (74%)	697 (26%)	2665 (100%)	3791 (75%)	1284 (25%)	5075 (100%)	3273 (62%)	2037 (38%)	5310 (100%)
1990-91	3234 (71%)	1353 (29%)	4587 (100%)	3028 (75%)	1008 (25%)	4036 (100%)	7932 (79%)	2135 (21%)	10067 (100%)	5784 (66%)	3022 (34%)	8806 (100%)
1991-92	3149 (69%)	1425 (31%)	4574 (100%)	3869 (72%)	1491 (28%)	5360 (100%)	10773 (80%)	2722 (20%)	13495 (100%)	5948 (66%)	3070 (34%)	9018 (100%)
1992-93	2937 (69%)	1337 (31%)	4274 (100%)	5029 (74%)	1747 (26%)	6776 (100%)	11329 (80%)	2826 (20%)	14155 (100%)	7037 (68%)	3271 (32%)	10308 (100%)
Total												
Number of Study Centres by 1994	29			17			29			17 = 92		

Source : Centre for Evaluation, Dr. BRAOU.

TABLE - 10
FEMALE LITERATES IN ANDHRA PRADESH

District	Females	Literates	Literacy Percentage
1. Hyderabad	1518690	808462	63.56
2. West Godavari	1753477	695686	46.98
3. Krishna	1820044	702387	45.54
4. East Godavari	2268260	802490	42.26
5. Nellore	1183880	373588	36.99
6. Ranga Reddy	1237406	369731	36.91
7. Chittoor	1602605	497687	36.44
8. Guntur	2022519	617234	35.85
9. Visakhapatnam	1621843	473414	34.60
10. Cuddapah	1107807	303667	32.35
11. Khammam	1085782	273387	30.53
12. Anantapur	1547818	354277	27.61
13. Prakasam	1358697	309596	27.06
14. Warangal	1382166	298488	26.08
15. Kurnool	1450406	307180	26.04
16. Nalgonda	1398187	286861	24.92
17. Srikakulam	1167307	228879	23.52
18. Karimnagar	1507695	296898	23.37
19. Vizianagaram	1055608	199615	22.47
20. Nizamabad	1027608	182754	21.35
21. Adilabad	1030467	172399	20.60
22. Medak	1117721	175796	19.25
23. Mahabubnagar	1517434	220796	18.03

Source : Education for All Advocacy Forum, College of Education,
Osmania University, Hyderabad

female enrolment, whereas Visakapatnam, Prakasam, Nellore show a decreasing trend in female enrolment. There has been a sudden drop in Visakapatnam with only 53 students difference in female enrolment from 1988 to 1993. In Vizianagaram, Prakasam and Nellore district, the female enrolment rates are in decreasing order (Table-11).

Telangana: In Medak, Ranga Reddy, Mahaboobnagar and Nizamabad districts, the total female enrolment increased in the past 5 years. Even the total enrolment increased phenomenally in these districts, whereas in Adilabad, Warangal and Karimnagar and Khammam district, there has been a low gain in female enrolment. The other interesting feature in these four districts is that there is a sudden drop in the total enrolment in 1992-93 when compared to the previous academic years (1991-92). To some extent the decrease in the enrolment rates in these districts may be due to the establishment of the School of Distance and Continuing Education by Kakatiya University, Warangal in 1988-89 for which Warangal, Karimnagar, Kammam and Adilabad districts are the main catchment areas (Table-12).

Twin Cities: In the twin cities of Hyderabad and Secunderabad there has been a gradual increase in the student enrolment in the past 4 years. But there has been a sudden drop in female enrolment rate in 1992-93 in the Twin Cities inspite of 17 study centres spread over them (Table-12).

The female students of the Twin cities have opportunities to go the courses they need. In Hyderabad several institutions offer job-oriented courses with class 10 pass certificate as qualification, like Shramikh Vidyapeeth, SETWIN etc. Besides these, Osmania University offers courses through distance mode. This decrease in female enrolment in U.G. Course may be an indicator that they are in search of opportunity for different job oriented skills and vocational courses.

Rayalaseema: In Rayalaseema, Kurnool district has witnessed high female enrolment when compared to the other three districts. Though Chittoor district is leading in total enrolment rate, followed by Kurnool, Anantapur and Cuddapah districts, it could not attract many women learners inspite of 6 study centres in the district. In the last 4 years there has been a gradual increase in the female enrolment in Kurnool district (30%) followed by Anantapur district (29%) whereas in Chittoor and Cuddapah districts, there has been a drastic decrease in female enrolment rate which needs to be examined.

TABLE - 11

DISTRICT-WISE STUDENTS (MALE-FEMALE) ENROLMENT IN UNDERGRADUATE COURSES
IN ANDHRA REGION OF A.P.

Name of District	No. of Study Centres	1889-90			1990-91			1991-92			1992-93		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1. Srikakulam	2	84 (36%)	14 (14%)	98 (100%)	171 (81%)	38 (19%)	209 (100%)	141 (81%)	33 (19%)	174 (100%)	130 (80%)	32 (20%)	162 (100%)
2. Vizianagaram	2	42 (63%)	25 (37%)	67 (100%)	70 (74%)	24 (26%)	94 (100%)	46 (72%)	18 (28%)	64 (100%)	132 (80%)	32 (20%)	164 (100%)
3. Visakhapatnam	2	288 (79%)	78 (21%)	366 (100%)	411 (80%)	100 (20%)	511 (100%)	275 (76%)	84 (24%)	359 (100%)	313 (92%)	26 (8%)	339 (100%)
4. East Godavari	3	292 (74%)	103 (26%)	395 (100%)	391 (71%)	159 (29%)	550 (100%)	341 (70%)	147 (30%)	488 (100%)	334 (71%)	134 (29%)	468 (100%)
5. West Godavari	3	151 (71%)	61 (29%)	212 (100%)	225 (73%)	83 (27%)	308 (100%)	168 (69%)	74 (31%)	242 (100%)	152 (69%)	69 (31%)	221 (100%)
6. Krishna	4	453 (63%)	267 (37%)	720 (100%)	685 (67%)	332 (33%)	1017 (100%)	671 (64%)	379 (36%)	1050 (100%)	554 (61%)	355 (39%)	909 (100%)
7. Guntur	2	252 (64%)	139 (36%)	391 (100%)	346 (66%)	178 (34%)	524 (100%)	324 (64%)	184 (36%)	508 (100%)	288 (64%)	164 (36%)	452 (100%)
8. Prakasam	3	339 (71%)	136 (29%)	475 (100%)	347 (66%)	175 (34%)	522 (100%)	334 (72%)	130 (28%)	464 (100%)	249 (66%)	128 (24%)	377 (100%)
9. Nellore	3	449 (68%)	207 (32%)	656 (100%)	588 (69%)	254 (31%)	852 (100%)	849 (69%)	376 (31%)	1225 (100%)	842 (71%)	340 (29%)	1182 (100%)

Source : Centre for Evaluation, Dr. BRAOU.

Spatial Distribution of Women Students

TABLE - 12
District-wise Students (Male-Female) Enrolment in Undergraduate Courses in Telangana Region of A.P.

Name of District	No. of Study Centres	1889-90			1990-91			1991-92			1992-93		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1. Mahaboobnagar	4	174 (66%)	86 (34%)	260 (100%)	424 (71%)	165 (29%)	589 (100%)	733 (79%)	193 (21%)	926 (100%)	1204 (78%)	345 (22%)	1549 (100%)
2. Nalgonda	2	397 (74%)	138 (26%)	535 (100%)	743 (78%)	210 (22%)	953 (100%)	917 (77%)	271 (23%)	1188 (100%)	1326 (76%)	384 (24%)	1710 (100%)
3. Rangareddy	1	33 (72%)	13 (28%)	46 (100%)	67 (72%)	26 (28%)	93 (100%)	121 (78%)	35 (22%)	156 (100%)	102 (69%)	45 (31%)	147 (100%)
4. Medak	2	189 (78%)	52 (22%)	241 (100%)	351 (81%)	84 (19%)	435 (100%)	710 (74%)	246 (26%)	956 (100%)	1211 (80%)	301 (20%)	1512 (100%)
5. Nizamabad	3	276 (71%)	114 (29%)	390 (100%)	594 (79%)	161 (21%)	755 (100%)	781 (78%)	219 (22%)	1000 (100%)	1433 (80%)	358 (20%)	1791 (100%)
6. Adilabad	2	222 (74%)	77 (26%)	299 (100%)	471 (79%)	125 (21%)	596 (100%)	580 (82%)	128 (18%)	708 (100%)	517 (83%)	104 (17%)	621 (100%)
7. Karimnagar	8	991 (80%)	255 (20%)	1246 (100%)	2054 (83%)	429 (17%)	2483 (100%)	2799 (84%)	533 (16%)	3332 (100%)	2519 (84%)	464 (16%)	2983 (100%)
8. Warangal	4	911 (76%)	294 (24%)	1205 (100%)	2056 (80%)	525 (20%)	2581 (100%)	2531 (83%)	531 (17%)	3062 (100%)	1887 (82%)	412 (18%)	2299 (100%)
9. Khammam	3	598 (70%)	255 (30%)	853 (100%)	1172 (74%)	410 (26%)	1582 (100%)	1601 (74%)	566 (26%)	2167 (100%)	1130 (73%)	413 (27%)	1543 (100%)
10. Hyderabad	17	3273 (62%)	2037 (38%)	5310 (100%)	5784 (66%)	3022 (34%)	8806 (100%)	5948 (66%)	3070 (34%)	9018 (100%)	7037 (68%)	3271 (32%)	10308 (100%)

Source : Centre for Evaluation, Dr. BRAOU.

TABLE - 13
DISTRICT-WISE STUDENTS (MALE-FEMALE) ENROLMENT IN UNDERGRADUATE COURSES
IN RAYALASEEMA REGION OF A.P.

Name of District	No. of Study Centres	1989-90			1990-91			1991-92			1992-93		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1. Chittoor	6	670 (75%)	219 (25%)	889 (100%)	1176 (75%)	391 (25%)	1567 (100%)	1487 (73%)	538 (27%)	2025 (100%)	2076 (76%)	640 (24%)	2715 (100%)
2. Anantagpur	3	556 (74%)	200 (26%)	756 (100%)	741 (76%)	236 (24%)	977 (100%)	918 (73%)	338 (27%)	1256 (100%)	1083 (71%)	439 (29%)	1522 (100%)
3. Cuddapah	4	272 (75%)	91 (25%)	363 (100%)	495 (77%)	146 (23%)	641 (100%)	601 (72%)	231 (28%)	832 (100%)	764 (76%)	242 (24%)	1006 (100%)
4. Kurnool	4	462 (71%)	187 (29%)	649 (100%)	616 (72%)	235 (28%)	851 (100%)	863 (69%)	384 (31%)	1247 (100%)	1070 (70%)	462 (30%)	1532 (100%)

Source : Centre for Evaluation, Dr. BRAOU.

In Chittoor district, the female enrolment rate fell from 27% in 1991-92 to 24% in 1992-93 and in Cuddapah district female rate fell from 28% in 1991-92 to 24% in 1992-93. Though Chittoor and Cuddapah districts are leading in female literacy rates with 36.44% and 32.35% respectively (1991 census) there is a fall in female enrolment, which is contradictory to the assumption that high female literacy leads to increase in women enrolment (Table-13).

CONCLUSIONS

The profile of the women undergraduate students of Dr.B.R.A.O.U strongly endorses the fact that Dr.B.R.Ambedkar Open University has had a great impact on adult women.

There has been a gradual increase in the percentage of women of the younger generation due to the relaxation in the age limit which indicates that many women are opting for Open University willingly.

It is essential to start study centres in tribal areas to enable the women from tribal areas to utilise this opportunity.

The spatial distribution of women is mainly influenced by the female literacy rates of the regions/districts of Andhra Pradesh. Usually high female literacy and economic well-being of the people of that area go together. It is evident that in the districts of the Andhra area, like West. Godavari, East Godavari, Krishna and Nellore, (the rich districts with high per capita income) economic well-being leads to leisure and there is scope for women to improve their qualifications, income and talents. The districts with low female literacy are economically backward where the women have to spend their whole day in working for a livelihood or household chores. Work leads to lack of leisure to improve the conditions of life. Hence, in economically backward districts/areas with low-female literacy, it is appropriate to start skill oriented vocational courses that fetch them some income along with literacy programmes. This may attract more women from those areas. The other factors that influence the rate of enrolment is number and proximity of the study centres. The strengthening of the existing correspondence directorates and starting of new Distance Education Directorates is also influencing, to some extent, the distribution rate from the catchment areas of that D.E. directorates. Obviously the fall in the female enrolment rates in areas like Chittoor district despite the larger number of study centres and relatively high female literacy rates might be due to economic, socio

cultural factors of that area, which requires deeper study. In Cuddapah and in the case of other districts where there is relatively high female literacy rate with low participation of women students, increase in the number of study centres may help more women to enter higher education.

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VIJAYALAKSHMI PANDIT. P., Ph.D. Thesis "Role of Distance Education in Empowerment of Women - A Case Study of Dr.B.R. Ambedkar Open University"

Educational Facilities to Scheduled Castes in Dr. B. R. Ambedkar Open University

9

G. Saroja and V. Chandrasekhar Rao

INTRODUCTION

Since ancient times, Indian society has been witnessing caste discrimination. The weaker, lower strata were victimized by the traditional practices and religious beliefs of the stronger upper caste population. As a result, these classes remained socially, economically and educationally backward even after Independence.

The term 'Scheduled Caste' was coined by Simon Commission in 1935 and came to be used for the people described as untouchables. Ambedkar termed them 'Outcastes' or brokenmen'. The 1931 Census classified them as 'exterior castes'. Mahatma Gandhi called these people 'Harijans'. The term 'Scheduled Castes(SC)' came into vogue after the enactment of the Indian Constitution.

Our National leaders who fought for social emancipation of the weaker sections stressed the importance of education in the enlightenment and socialisation of these communities. Dr.B.R.Ambedkar said, "We may forgo material benefits of civilization, but we cannot forgo our right and opportunity to reap the benefits of higher education to the fullest extent... Backward Classes... have just realised that without education their existence is not safe".

Article 46 of the Indian Constitution makes it mandatory on the state, "to promote with special care the educational and economic interests of the weaker sections of the people and in particular, of the scheduled castes and scheduled tribes, and protect them from social injustice and all forms of exploitation". In view of the constitutional obligation, provisions have been made for reservations of seats for admissions to various courses of study and appointments to teaching and non-teaching posts in universities and colleges. The UGC, from time to time, brings out guidelines to meet this requirement.

STATUS OF SCHEDULED CASTES IN INDIA

According to the 1991 Census, the total population of Scheduled castes is 106.23 millions, i.e., 16.73% of the total Indian population. Mainly six states account for two-thirds of SC population in India. The highest number of SCs is found in Uttar Pradesh (22.3% of total SC population). Andhra Pradesh occupies the fifth position with 7.6% of SC population in India. About 84% of SCs live in rural areas employed agricultural labourers in marginal and petty occupations.

OBJECTIVES OF THE STUDY

The present paper examines the enrolment status of scheduled caste students in Dr.B.R.Ambedkar Open University in the light of the UGC guidelines for admissions in Universities and colleges. This analysis helps us to assess the level of awareness among S.C. students regarding Open University education.

The specific objectives of the study are:

- (1) To examine how far the Dr.B.R.Ambedkar Open University is adhering to the rules prescribed by UGC for reservation of seats for SCs;
- (2) To examine the trends in SC enrolments in DR.BRAOU during the years 1988-89 to 1993-94; region-wise study of the SC enrolments in Dr.BRAOU;
- (3) District-wise analysis of SC enrolment in Dr.BRAOU; and
- (4) Male-female ratio of SC enrolments.

METHODOLOGY

The study is based on the data collected from the Evaluation Reports brought out by the Centre for Evaluation of Dr.B.R.Ambedkar Open University and the data regarding SC population (district-wise) obtained from Andhra Pradesh Year book 1994 (Refer to APPENDIX for district-wise SC Population). The data have been analysed against the background of the above stated objectives. The results have been presented in the form of tables and graphs.

The Coefficient of Equality (C.E.) has been calculated in order to know the progress of SC enrolments in Dr.BRAOU. The C.E. has been calculated using the formula:-

$$\text{C.E.} = \frac{\text{Percentage of Enrolment of SCs to Total Enrolment}}{\text{Percentage of Population of SCs to Total Population}}$$

Tables and graphs have been appropriately interpreted to arrive at specific conclusions. Suggestions have been made based on the conclusions.

U G C Guidelines for admission:

The UGC has invited the attention of the universities and colleges to the guidelines issued by the Government of India from time to time and has requested them to reserve 20 percent of the seats for SC and ST candidates in the matter of admissions. Of this 20 percent, 15 percent seats are reserved for SCs and 5 percent for STs. A concession of 5 marks is permitted to these communities in respect of minimum percentage of the marks prescribed for admission to courses to ensure the desired level of reservations. The UGC has established an SCT cell to supervise the effective implementation of the reservations and has advised universities to set up similar SCT cells.

Education through Open University

Dr.B.R.Ambedkar Open University has been supporting the Scheduled Castes in pursuing Undergraduate and Post-Graduate education by providing fee concessions, scholarships and other regulations prescribed by the UGC.

The students of UG programmes are exempted from paying the fee at the time of admission. For unemployed SC students the University offers scholarships to meet all kinds of fee requirements. For this they are required to submit their Caste certificate certified by Mandal Revenue Officer and Non-employment Certificate. Scholarships are also awarded to those students with an income less than Rs.18,000 per annum on submitting a self-declaration certificate. SC students are permitted two extra years for the completion of their UG programme while, for all other categories, it is ten years.

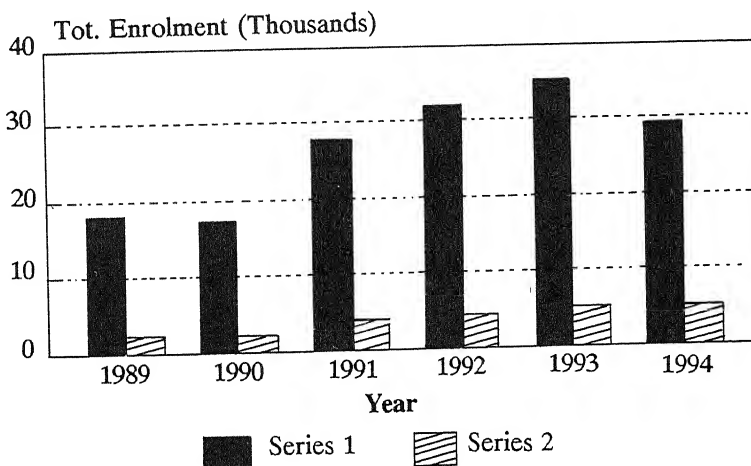
In June 1993, the University established a Scheduled Caste & Scheduled Tribe Cell headed by a Convener to look into the problems and grievances of SC and ST students.

TABLE-1

SC Student Enrolment in Dr.BRAOU (1988-89 to 1993-94)

Year	Tot.Enrolment	SC Enrolment	% SC Enrolment
1988-89	16849	1551	9.21
1989-90	16422	1445	8.80
1990-91	27496	3048	11.09
1991-92	32447	3899	12.02
1992-93	35313	4361	12.28
1993-94	29255	4186	14.31

Figure - 1
SC - Enrolment in Dr. BRAOU
1988-89 to 1993-94

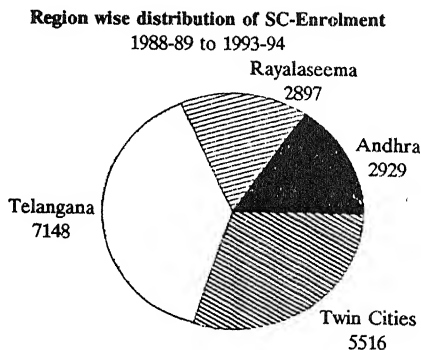


From Table-1 it is evident that the percentage of SC-student enrolment to total enrolment over the past six years has been constantly increasing. It ranges between 9.21% to 14.31%. However, the stipulated norm of 15% reservation for Scheduled Caste students has not been totally fulfilled. In the Academic year 1993-94 the norm of 15% (14.31%) reservation was almost achieved. Figure-1 depicts the ratio of SC enrolment to total enrolments through a Bar diagram.

TABLE-2:
REGION-WISE DISTRIBUTION OF SCHEDULED CASTE
STUDENT ENROLMENT DURING 1988-89 AND 1993-94

Year	Andhra	Rayalaseema	Telangana	Twin Cities	Total
1988-89	396	202	487	466	1551
1989-90	317	236	463	429	1445
1990-91	500	393	1206	949	3048
1991-92	519	555	1730	1095	3899
1992-93	543	713	1762	1343	4361
1993-94	654	798	1500	1234	4186
Ttoal	2929	2897	7148	5516	18490

Figure-2



From Table-2 it is clear that all the three regions of Andhra Pradesh State including the twin cities showed a gradual increase in the rate of SC enrolments. Out of the three regions, Telangana region ranked first with highest (55.1%) SC enrolments, followed by Andhra region(22.6%) and Rayalaseema (22.3%). The SC enrolment of twin cities alone accounted for 29.8% of total SC enrolments of the State over the past six years.(See figure-2)

TABLE-3
DISTRICT-WISE SC ENROLMENT (1992-93)

Sl. No.	Name of the District	Total Enrolment	SC Enrolment	Percentage Enrolment	CE
1.	Srikakulam	162	10	6.17	0.46
2.	Vizianagaram	164	7	4.27	0.41
3.	Visakhapatnam	339	21	6.19	0.79
4.	East Godavari	468	67	14.32	0.79
5.	West Godavari	221	39	17.65	0.99
6.	Krishna	909	120	13.20	0.79
7.	Guntur	452	63	13.94	0.99
8.	Prakasam	377	37	9.81	0.49
9.	Nellore	1182	179	15.14	0.69
10.	Ranga Reddy	147	27	18.37	1.07
11.	Hyderabad	10308	1343	13.03	1.47
12.	Medak	1512	194	12.83	0.72
13.	Nizamabad	1791	199	11.11	0.73
14.	Mahabubnagar	1549	171	11.04	0.63
15.	Warangal	2299	227	9.97	0.57
16.	Nalgonda	1710	219	12.81	0.72
17.	Khammam	1543	216	13.99	0.86
18.	Karimnagar	2983	384	12.87	0.69
19.	Adilabad	621	125	20.13	1.09
20.	Kurnool	1532	193	12.60	0.72
21.	Cuddapah	1006	94	9.34	0.63
22.	Ananthapur	1522	147	9.66	0.69
23.	Chittoor	2716	279	10.27	0.56

As seen from Table-3, it is evident that during the year 1992-93 the highest enrolment of SC students has been registered in Hyderabad district, that is, 1343 (30.8%), followed by Karimnagar with 384 (8.8%) and Chittoor with 279 (6.4%).

The Coefficient of Equality was calculated to know the district wise percentage representation of SC population in Dr.BRAOU. The highest C.E. is found in Hyderabad (1.47), followed by Adilabad (1.09) and Ranga Reddy (1.07). This shows that the highest representation is from Telangana region. There is not much variation in C.E. in other districts, which ranges from 0.41 to

TABLE-4

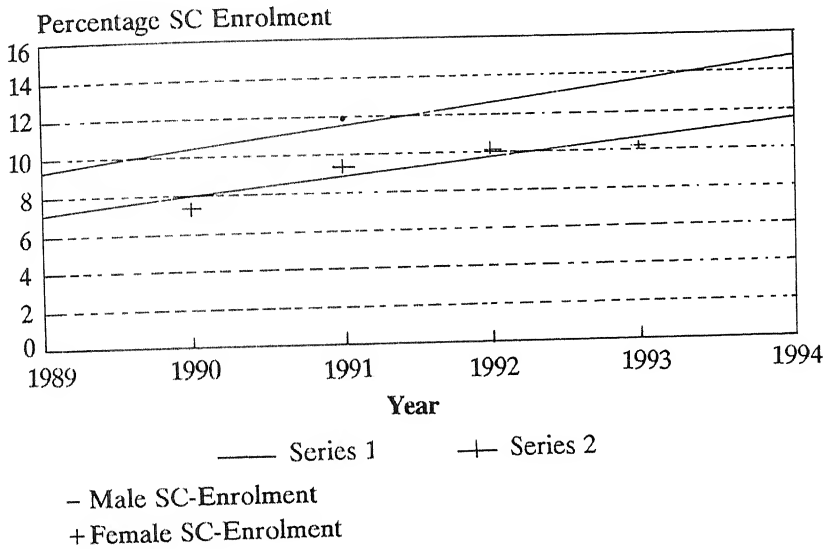
MALE-FEMALE SC STUDENT ENROLMENT IN DR.BRAOU
(1988-89 TO 1993-94)

Year	Total Males	Total Females	SC Males	% of Males	SC Females	% of Females
1988-89	11503	5346	1139	9.90	412	7.71
1989-90	11374	5048	1085	9.53	360	7.13
1990-91	19978	7518	2339	11.70	709	9.43
1991-92	23739	8708	3028	12.76	871	10.00
1992-93	26332	9181	3409	12.95	952	10.37
1993-94	21158	8097	3227	15.25	959	11.84

Table-4 analyses Male-Female SC student enrolment during the years 1988-89 to 1993-94. It is found that overall representation of male students is higher than that of females. Both male and female SC student enrolment showed a gradual increase over the period. Representation of female students is higher in Hyderabad and its nearby districts whereas it is low in districts like Srikakulam, Vijayanagaram and Visakhapatnam. Figure-3 depicts the trend of male and female SC student enrolment during 1988-89 to 1993-94

Figure-3

Male-Female Ratio of SC-Enrolment
1988-89 to 1993-94



INFERENCES

1. There has been a gradual increase in the percentage of SC student enrolment over the years 1988-89 to 1993-94. The stipulated UGC norm of 15% reservation for SCs has been nearly achieved in Dr.BRAOU.
2. Telangana region and Twin Cities show the highest SC enrolments compared to Andhra and Rayalaseema.
3. Coefficient of Equality is also found to be high in Telangana districts of Hyderabad, Adilabad and Ranga Reddy.
4. Female SC student enrolment is observed to be comparatively less.

The above analysis clearly indicates that Telangana region has better representation of SC students. This shows a greater awareness of SCs of this region regarding educational facilities in Open University. This awareness can be attributed to the fact that the population in twin cities has better communication facilities. Also there are more number

of University study centres (Twin cities 12; Telangana region 20) through which students obtain upto date information regarding different programmes of study. Though the University has a well spread network of study centres in Andhra and Rayalaseema, the representation of SCs from these regions is observed to be low. Hence there is a need to enhance the students' awareness by setting up more information/guidance centres in these regions.

These Information centres can also help in acheiving the stipulated target of 15% reservation for SCs in the University.

LIBRARY BASED INFORMATION CENTRES

The need for educational information is of paramount importance to SC people. The information needs can be categorised into two types: i) Pre-enrolment information, and ii) Post-enrolment information. In the pre-enrolment stage, the learners are anxious to know about the various programmes of study offered by the University, the time of commencement of the academic year, entry requirements, rules and regulations, recognition, career prospects, etc. The response expected may range from simple advice to referral or a detailed information brochure. The Post enrolment information regarding fee payment, classes, assignments, peer groups, examinations, etc., is provided from time to time by the University or its study centre offices on admission. It is difficult to obtain pre-enrolment information unless people are aware of the University and its study centres through formal or informal channels.

The educational information can be served to the public through information centres. Information/guidance centres can be part of the University study centres or public libraries. The study centres have certain limitations as they are located in the capital or principal towns of the districts. These are not within the reach of the locality of SC people. Poor people aspiring for higher studies cannot afford to visit distant places just for information. Further, the people of these communities out of shyness and fear often hesitate to approach the authorities. They depend on the elders, neighbours, local elite and other sources of information, which may sometimes turn out to be misleading. Therefore, there is a need for information centres within easy reach to help and guide the disadvantaged communities with right information.

PUBLIC LIBRARIES AS INFORMATION CENTRES FOR SCs

Public libraries are social institutions meant for the general public. They are located even in rural areas and are within the reach of every community. The public library always supports the cause of education.

The UNESCO Public Library Manifesto (1994 revision) stresses the importance of public library as the local gateway to knowledge and provides a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social groups. Among its key missions education is a prime area as it supports both individual and self conducted education as well as formal education at all levels. In the case of disadvantaged communities like SCs, public libraries have an additional responsibility in providing reach out services.

In recent years, public libraries have started providing community information services which assist individuals and groups, of mainly disadvantaged communities, in their problem solving efforts. The two main aims of this service are i) to link the client with a problem to the appropriate agency that could answer his or her needs, and ii) to supply the service providers with feedback from users. Our public libraries too should adopt such services mainly for the disadvantaged groups like SCs, who are at the lower rungs of society. This also suggests opening up of exclusive information centres in branch libraries in the areas where SC communities are predominant. The functions of such Centres shall be as follows:

- 1) Acting as an educational information centre providing advice/guidance and counselling in matters of educational information needs;
- 2) Providing liaison service between the educational institutions such as Open Universities and their study centres;
- 3) Collecting a wide range of print materials as well as audiovisual materials on educational programmes of various educational institutions,
- 4) Serving timely, accurate and useful information to the communities in their educational information needs;
- 5) Providing services to the members of the communities who can not visit the information centres; etc.

CONCLUSION

Open universities provide education to the masses and a large number of people have benefitted through this system. The scheduled castes are provided with concessions in the form of reservation of seats, fee scholarships and extended period for completion of courses of study. However, the stipulated percentage of seats has not been achieved as most of the people of these communities from rural areas are not aware of the educational facilities provided by the University. One way of increasing the levels of awareness is through establishment of information/guidance centres which shall be a part of the public libraries.

The Open Universities in United Kingdom, Thailand and Malaysia have been using public libraries to serve their learners as it is not possible for them to develop a wide network of libraries of their own. In our country, we have not yet realised the potential role of public libraries in the service of distance learners. Our public libraries too should play an active role by adopting community information services, especially for the upliftment of disadvantaged communities like the Scheduled Castes. In liaison with the Open Universities they can start information centres in the branch libraries located in the areas where SC communities are predominantly settled. Such services can be extended gradually to other community information services and to other backward communities.

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APPENDIX

TABLE-5
DISTRICT-WISE SC POPULATION

Name of the Population	Total Population	SC Population	Percentage
1. Srikakulam	2321126	216898	9.34
2. Vizianagaram	2110943	220352	10.43
3. Visakhapatnam	3285092	256936	7.82
4. East Godavari	4541222	826057	18.19
5. West Godavari	3517568	629233	17.89
6. Krishna	3698833	613230	16.58
7. Guntur	4106999	573407	13.96
8. Prakasam	2759166	552640	20.03
9. Nellore	2392260	522819	21.85
10. Ranga Reddy	2551966	439386	17.22
11. Hyderabad	3145939	278739	8.86
12. Medak	2269800	405722	17.87
13. Nizamabad	2037621	307997	15.12
14. Mahabubnagar	3077050	542380	17.63
15. Warangal	2818832	484654	17.19
16. Nalgonda	2852092	504206	17.68
17. Khammam	2215809	360154	16.25
18. Karimnagar	3037486	563941	18.57
19. Adilabad	2082479	385942	18.53
20. Kurnool	2973024	518108	17.43
21. Cuddapah	2267769	337939	14.90
22. Ananthapur	3183814	451810	14.10
23. Chittoor	3261118	599516	18.38

Source: *A P Year Book 1994*. Hyderabad: Data News Features Publications, 1994. p.175-220.

Science Through Distance Education : Counsellors' Response - A Study

10

M.Satyanarayana Rao and G. Srinivasacharyulu

INTRODUCTION

In this age of information, especially information on scientific and the technological developments in the application of science, information has to be disseminated quickly in such a way that the fruits of these endeavours are readily available to all people for exploitation and exploration.

Science has had until recently an assured place only in regular, conventional schools and colleges. Contrary to the beliefs of many scientists who held that science cannot be confined to classrooms or laboratory, it became a generally accepted notion that science required classrooms and laboratories. Now, open and distance educational institutions have started offering science programmes as a part of their regular curricula. Such institutions are spending a good portion of their budget on the necessities of science faculty viz laboratories, laboratory equipments, instruments, specimens etc., video cassettes, hiring required personnel for its programmes etc. Despite such heavy and regular, recurring investments science programmes through distance education mode do not compare favourably with those of conventional colleges.

Dr. B.R.Ambedkar Open University started imparting science through the distance mode from the time of its inception i.e. 1983. It is now high time we see where we are in our exercise, how we can rank ourselves as science educators through the distance mode, how successfully we are able to impart science education and how proficient the students who receive the science programmes are.

This paper, which is based partly on the study on Science through Distance Education, deals with the counsellors' response on Science through Distance Education.

OBJECTIVES

The main objectives of the study are :

- (i) To study the views of Science Counsellors of the Open University on Science courses with regard to course material, conduct of practical contact sessions, problems faced by counsellors with students of formal and non-formal streams;
- (ii) To find out the components of the conduct of science programmes which are viewed by the students as important and useful;
- (iii) To study the conduct of the practical contact sessions;
- (iv) To find out how the response to science programmes, if introduced at post-graduate and at vocational levels, will be;
- (v) To recommend the strategies to be taken up by the University
 - a) to improve performance of science students at all levels - entry, course material, conduct of practicals and laboratory record-cum-manual;
 - b) to improve the performance of the science counsellors on the given functions of counsellors;
 - c) to guide the role of science subject departments of the Open University in the context of identified areas of improvement.

METHODOLOGY

Counsellors of Science subjects viz., Chemistry, Physics, Botany, Zoology and Geology of the Open University were approached. A questionnaire designed and developed for this purpose was given to 115 counsellors and a total of 105 were found answered, giving a return rate of 91%. The findings are based on the responses to the questionnaires.

THE QUESTIONNAIRE

The questionnaire developed consisted of 28 questions. The questions touched the aspects of counsellors' teaching experience, problems they face with students, those without +2/Intermediate qualifications; conduct of practicals and counselling classes; use of audio and video by counsellors for counselling and practical sessions and so on.

The answers to the various questions posed in the questionnaire were expected on rating scales.

RESULTS

The answers were analysed and represented in tables as follows:

Table - I
No. of Counsellors Working in Conventional Colleges

Subject	Counsellors working in conventional colleges	Total Number of Counsellors	Percentage
1. CHEMISTRY	23	24	95.83
2. PHYSICS	24	24	100.00
3. BOTANY	24	24	100.00
4. ZOOLOGY	26	26	100.00
5. GEOLOGY	4	7	57.14
TOTAL	101	105	96.19

A majority of the counsellors 96.19% of the sample are working in conventional colleges. All the counsellors of the subjects, Physics, Botany and Zoology reported to be working in conventional colleges. Only one of the 24 counsellors of Chemistry and 3 out of 7 counsellors of Geology reported not to be working in conventional colleges.

Table - II
Academic Qualifications of Counsellors

Subject	Academic Qualifications						
	M.Sc.	M.Sc., B.Ed.	M.Phil.	M.Phil. B.Ed.	Ph.D.	Ph.D. B.Ed.	Not Answered
1. CHEMISTRY	10 (41.67)	2 (8.33)	3 (12.50)	1 (4.17)	5 (20.83)	0 (0.00)	3 (12.50)
2. PHYSICS	5 (20.80)	2 (8.33)	3 (12.50)	1 (4.17)	12 (50.00)	0 (0.00)	1 (4.17)
3. BOTANY	7 (29.17)	3 (12.50)	2 (8.33)	1 (4.17)	11 (45.83)	0 (0.00)	0 (0.00)
4. ZOOLOGY	8 (30.77)	1 (3.85)	4 (15.38)	0 (0.00)	13 (50.00)	0 (0.00)	0 (0.00)
5. GEOLOGY	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	6 (85.71)	1 (14.29)	0 (0.00)
	30 (28.57)	8 (17.62)	12 (11.43)	3 (2.86)	47 (44.76)	1 (0.95)	4 (3.81)

(Percentages are in brackets)

As indicated in Table-II, of the 105 counsellors, 44.76% of counsellors are Doctorates in their respective fields, 28.55% have Post-Graduation as minimum qualification. 17.62% had done B.Ed. apart from Post Graduation, 2.86% had B.Ed. with M.Phil qualification. Only one counsellor had B.Ed. qualification along with Ph.D. All the counsellors had Post-graduate degrees in their respective fields as minimum qualification.

TABLE - III
UTILITY RATINGS OF LABORATORY
MANUAL CUM RECORD

Sl. No.	Subject	Most Useful	Moderately Useful	Least Useful	Not Replied
1	CHEMISTRY	13 (54.17)	9 (37.50)	2 (8.33)	0 (0.00)
2	PHYSICS	8 (33.33)	13 (54.17)	2 (8.33)	1 (4.17)
3	BOTANY	11 (45.83)	9 (37.50)	1 (4.17)	3 (12.50)
4	ZOOLOGY	9 (34.62)	11 (42.31)	2 (7.69)	4 (15.38)
5	GEOLOGY	6 (85.71)	1 (14.29)	0 (0.00)	0 (0.00)
		47 (44.76)	43 (40.95)	7 (6.67)	8 (7.62)

(Percentages are in brackets)

Table-III indicates the counsellors' rating of the utility of Laboratory Manual cum record. About 85% of the counsellors found the Laboratory Manual cum Record useful - 40.95% of the counsellors rated it as moderately useful and 44.7% rated it as most useful. Only 6.67% found that laboratory cum manual least useful.

TABLE - IV
COUNSELLORS' VIEW ON INTRODUCING VIDEO FILM ON PRACTICALS

Sl. No.	Subject	Yes	No	Not Sure	Not Replied
1	CHEMISTRY	20 (83.33)	1 (4.17)	2 (8.33)	1 (4.17)
2	PHYSICS	11 (45.83)	5 (20.83)	5 (20.83)	3 (12.50)
3	BOTANY	18 (75.00)	2 (8.33)	2 (8.33)	2 (8.33)
4	ZOOLOGY	13 (50.00)	4 (15.38)	2 (7.69)	7 (26.92)
5	GEOLOGY	6 (85.71)	0 (0.00)	1 (14.29)	0 (0.00)
		68 (64.76)	12 (11.43)	12 (11.43)	13 (12.38)

(Percentages are in brackets)

On introducing a video film on practicals, which would incorporate all practicals aim to have scientific analysis, 64.76% of counsellors agreed to such introduction. 11.43% were not able to decide and 12.38% did not reply to the query.

TABLE - V
OPINION ON OPEN UNIVERSITY'S PRINTED COURSE MATERIALS

Sl. No.	Subject	Very Satisfactory	Satisfactory	Not Sure	Not Satisfactory	Not at all Satisfactory
1	2	3	4	5	6	7
1	CHEMISTRY	21 (87.50)	3 (12.50)	0 (0.00)	0 (0.00)	0 (0.00)
2	PHYSICS	12 (50.00)	5 (20.83)	0 (0.00)	5 (20.83)	1 (4.17)

Synergy : Facets of Research in Open Learning

1	2	3	4	5	6	7
3	BOTANY	18 (75.00)	3 (12.50)	0 (0.00)	3 (12.50)	0 (0.00)
4	ZOOLOGY	20 (76.92)	4 (15.38)	0 (0.00)	1 (3.85)	0 (0.00)
5	GEOLOGY	6 (85.71)	1 (14.29)	0 (0.00)	0 (0.00)	0 (0.00)
		77 (73.33)	16 (15.24)	0 (0.00)	9 (8.57)	1 (0.95)

(Percentages are in brackets)

Regarding the Open university's printed course materials standards 73.33% of counsellors rated them to be highly satisfactory and 15.24% of counsellors rated them as satisfactory. Only one person out of 105 counsellors rated the printed course material of the university as being not at all satisfactory. The assessment reflects how good the course material is in imparting education to its seekers.

From the Fig: 1, it can be seen that 25% of counsellors of Physics and about 12% of the counsellors of Botany are not satisfied with the printed course material of respective subjects.

Figure-1

OPEN UNIVERSITY'S PRINTED COURSE MATERIAL

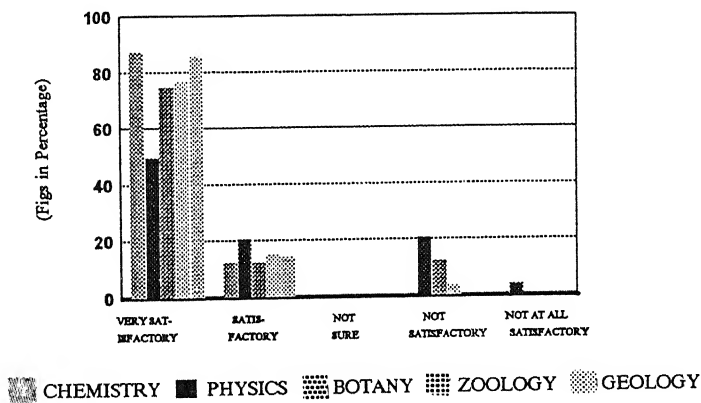


TABLE - VI
ON UNIVERSITY'S PROPOSAL TO CONSIDER THE
FOLLOWING STEPS
TO IMPROVE SCIENCE STUDENTS' PERFORMANCE

Sl. No.	Subject	Imparting Study Skills to Become Independent Learners	Correcting Previous Learning	Special Pre-Entry Counselling	Manuals Reaching in time	Short Session Non-Science/ Non-Formal Students
1	Chemistry	11 (45.83)	5 (20.83)	8 (33.33)	14 (58.33)	16 (66.67)
2	Physics	13 (54.17)	10 (41.67)	11 (45.83)	17 (70.83)	13 (54.17)
3	Botany	7 (29.17)	5 (20.83)	8 (33.33)	18 (75.00)	17 (70.83)
4	Zoology	10 (38.46)	4 (15.38)	6 (23.08)	17 (65.38)	17 (65.38)
5	Geology	5 (71.43)	0 (0.00)	3 (42.86)	5 (71.43)	6 (85.71)
		46 (43.81)	24 (22.86)	36 (34.29)	71 (67.62)	69 (65.71)

(Percentages are in brackets)

Table VI indicates counsellors' opinions on University's consideration of necessary steps to be taken in the direction of improving science students' performance.

Over 67% of counsellors felt the necessity of ensuring that manuals reached students on time, 65.7% felt that there should be a short session before the beginning of practicals for non-formal and non-science background students. 43.81% believed that students' study skills should be improved, 34.29% felt that special pre-entry counselling is essential

so that students will not make wrong choice in selecting their programmes. Only 22.86% of counsellors have said that University should also correct the short-coming of previous formal learning.

TABLE - VII

COUNSELLORS' SELF RATING ON THEIR PERFORMANCE
AS COUNSELLORS

Sl. No.	Aspects	Least Satisfactory	Satisfactory	Most Satisfactory	Not Replied
1.	Providing intensive help to students with problems situational, personal etc. (N)	19	54	12	20
	(%)	18.10	51.43	11.43	19.04
2.	Providing help to the students with academic problems and difficulties (N)	10	59	19	16
	(%)	9.52	56.19	18.10	15.23
3.	Teaching and helping the students get through the course successfully (N)	11	56	28	10
	(%)	10.40	53.33	26.67	9.52
4.	Informing the students on what line of job they would probably get after completing course (N)	21	52	10	22
	(%)	20.00	49.52	9.52	20.95
5.	Guiding the students in completing all the practicals successfully (N)	15	46	25	19
	(%)	14.29	43.81	23.81	18.09
Performance of Counsellors (%)		14.50	50.80	17.91	16.60

Excluding 16.6% (on average) counsellors who did not respond, a majority of the counsellors over 67% felt they were doing justice to the functions of counsellors.

About 14% were not satisfied with the performance of counsellors.

TABLE - VIII
INTRODUCTION OF A FEW STRATEGIES FOR
ENHANCING PERFORMANCE OF SCIENCE PRACTICALS

Sl. No.	Strategies	Responses of Counsellors		
		Yes	No	Not Replied
1.	Introduction of Mobile laboratory to remote areas	69 (65.71)	20 (19.05)	16 (15.25)
2.	Introduction of home kits for experiments which can be done independently by students	49 (46.67)	40 (38.10)	16 (19.25)
3.	Picturisation of few experiments which are aimed purely at scientific analysis and interpretation	82 (70.83)	7 (12.50)	16 (16.67)

(Percentages are in brackets)

Table-VIII reveals that a majority of the counsellors welcome the strategies, 65.71% of them agreed to the introduction of the mobile van, 46.67% agreed to the introduction of mobile laboratory, 78.10% of them readily agreed to picturized presentation of certain experiments.

For the same strategies, 19.05%, 38.10% and 6.67% of the counsellors did not show their acceptance respectively. On an average about 17% of the counsellors have not replied to the question on the introduction of the three strategies. (Fig.:2)

INTRODUCTION TO STRATEGIES FOR ENHANCING
PERFORMANCE OF SCIENCE PRACTICALS.

(Fig: 2.)

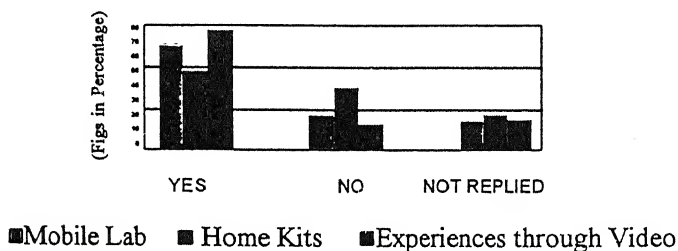


TABLE - IX
USE OF AUDIO LESSONS

Sl. No.	Subject	Yes	No	Not Replied
1	Chemistry	8 (33.33)	14 (58.33)	2 (8.33)
2	Physics	6 (25.00)	14 (58.33)	4 (16.67)
3	Botany	6 (25.00)	13 (54.17)	5 (20.83)
4	Zoology	8 (30.77)	12 (46.15)	6 (23.08)
5	Geology	2 (28.57)	5 (71.43)	0 (0.00)
		30 (28.57)	58 (55.24)	17 (16.19)

(Percentages are in brackets)

Table IX reflects the use of audio lessons by counsellors. 55% of counsellors had not listened to even a few cassettes, only 28.5% of them had listened to the cassettes. These results might indicate non-availability of proper provisions at the centres apart from non-accessibility to cassettes and infrastructure. Fig:3 shows that among counsellors of each of the science subjects, the majority of the counsellors did not use audio lessons.

USE OF AUDIO LESSONS BY COUNSELLORS
(FIG. 3.)

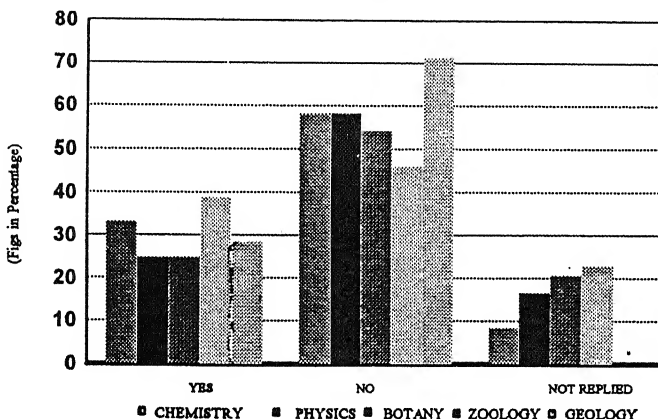


TABLE - X
USE OF VIDEO LESSONS IN TEACHING-LEARNING
SITUATIONS BY COUNSELLORS

Sl. No.	Subject	Practicals		Counselling	
		Yes	No	Yes	No
1	Chemistry	8 (33.33)	13 (54.17)	7 (29.17)	16 (66.67)
2	Physics	2 (8.33)	18 (75.00)	3 (12.50)	19 (79.17)
3	Botany	3 (12.50)	15 (62.50)	3 (12.50)	19 (79.17)
4	Zoology	5 (19.23)	16 (61.54)	3 (11.54)	18 (69.23)
5	Geology	2 (28.57)	4 (57.14)	3 (42.86)	4 (57.14)
		20 (19.05)	66 (62.86)	19 (18.10)	76 (72.38)

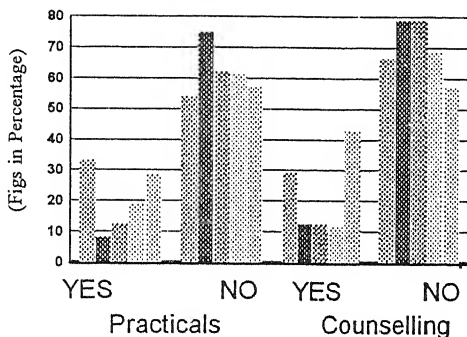
(Percentages are in brackets)

Table X indicates that video films have not been used for practicals although there are many cassettes made exclusively for practicals by the university. Of the total counsellors 62.8% and 72.38% said that they did not use video cassettes for either practicals or counselling purpose. Fig:4 reveals that a relatively larger number of counsellors of each of the science subjects are those who had not used video lessons.

The common complaint was that the required hardware was never functional, and video cassette players being a unique model (beta-max) getting them repaired or serviced posed a problem. That apart rooms at a few study centres are too tiny to accommodate even a few students in one sitting.

**USE OF VIDEO LESSONS IN
TEACHING-LEARNING SITUATIONS BY
COUNSELLORS**

(Fig : 4.)



CHEMISTRY PHYSICS BOTANY ZOOLOGY GEOLOGY

TABLE - XI

LEVEL OF INTRODUCTION OF SCIENCE PROGRAMMES

S.No.	Subject	Post Graduate	Vocational
1	Chemistry	9 (37.50)	15 (62.50)
2	Physics	12 (50.00)	19 (79.17)
3	Botany	10 (41.67)	18 (75.00)
4	Zoology	9 (34.62)	17 (65.38)
5	Geology	3 (42.86)	3 (42.86)
		43 (40.95)	72 (68.57)

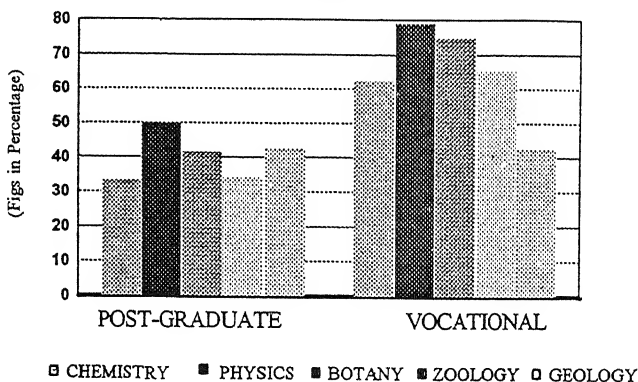
(Percentages are in brackets)

Table XI shows counsellors' views on introduction of various science programmes at the post graduate and vocational level. As it is clear from the table, 68.57% of the counsellors welcomed the idea of introducing various science vocational programmes.

Only 40.95% of counsellors, encouraged introduction of science programmes at the Post-graduate level. Similar trend can be seen in each of the science subjects from Fig:5. The number of counsellors preferring vocational programmes to Post-graduate programmes are more in each and every science subject without exception.

LEVEL OF INTRODUCTION OF SCIENCE PROGRAMMES

(Fig : 5.)



CONCLUSIONS

The significant aspects of counsellors' responses are listed below:

1. Of the 105 counsellors, 24 belonged to Chemistry, 24 to Physics, 24 to Botany, 26 to Zoology and 7 to Geology.
2. 92% of the counsellors of the Open University have teaching experience at Undergraduate level in conventional colleges.
3. Over 96% of the counsellors have reported to have counselling experience earlier in Open University.
4. All of them have postgraduation in their respective areas as minimum educational qualification. More than one third of counsellors are Ph.D. holders in their fields.

5. Counsellors were active in the academic pursuit which is reflected in the publication of their research papers in their respective fields. Almost 50% counsellors have published their papers and 11.43% have published their books too.
6. 84.75% of the counsellors felt that students come to Study Centers mostly for practicals and counselling and 5.71% counsellors felt that they come for viewing video films produced by the university.
7. The laboratory manuals-cum-record produced by the University were rated as good by about 84% of the sample, out of which about 44% found them most useful.
8. In addition, it was also observed by 56.19% of the counsellors that the students rely solely on the course materials made available by the University to the students.
9. Excepting Geology, 50% of the counsellors of the other four subjects (viz., Physics, Chemistry, Botany and Zoology) said that they get students without intermediate level for practicals.
10. 65% of the counsellors welcomed the idea of making and showing video films demonstrating all/some of the practicals of a particular academic year to familiarize the students to the laboratory situation.
11. When given the choice to select proper/suitable time for counsellors, 10.48% chose beginning of the academic year, 44.76% chose middle of the year and 40.95% chose end of academic year.
12. 57% of the counsellors felt that the single practical session should be split into two convenient halves. conveniently spaced to allow them to do practicals better.
13. 74% of the counsellors felt the necessity for providing additional practical contact session, if desired by the students for either repetition or for dropouts.
14. Over 73% of the counsellors expressed satisfaction over the print materials of the university and conduct of counselling sessions.
15. A sizable proportion of counsellors, around 73.33%, have expressed their satisfaction of their performance as counsellors. 7.62% felt they were functioning very satisfactorily, while 10.48% were dissatisfied with their performance.
16. Although 47% of the counsellors felt that only the lecture method is useful in counselling, and the remaining 53% did not agree to it, they had no idea of what could be the alternative method.

17. On the five aspects of conduct of practicals, over 50% of the counsellors have compared Open University's practicals favourably with those of conventional colleges. But around 30 to 40% were not satisfied with the conduct of practicals.
18. Of the counsellors, 60% had seen Opvarsity newsletter, 26% had not seen it and the remaining 14% were not sure whether they had seen it or not.
19. Some of the counsellors felt that Opvarsity was useful for the students of science. Yet it is necessary to study the focus given in Opvarsity Newsletter against the role expected of it.
20. Counsellors have indicated that the University in its attempt to improve students' performance should ensure that
 - a) books and manuals reach students on time.
 - b) students are taught study skills.
 - c) pre-entry counselling is made available so that a student does not make a wrong choice.
21. Counsellors felt satisfied with their performance. Yet it is equally important to know why some counsellors felt dissatisfied with their performance. Analysis on these grounds might shed light on areas of counselling which need further improvements maybe in terms of skills, expertise etc.
22. Regarding the strategies that can be introduced to improve the performance of science practicals, 65% agreed to the introduction of mobile van, 46% to home kits and 78% to picturisation of some of the experiments which are aimed solely to developing students' capacity to analyze and interpret.
23. Of the counsellors, 81% have not used audio lessons.
24. 8% of the counsellors have used the video cassettes in counselling and 19% have used them in practicals.
25. Only 39% of the counsellors have agreed for the pro rata system of payment per student. About 46% have not replied to this issue perhaps because they might not be aware of the pro-rate system.
26. 72% of the counsellors approved of introducing vocational programmes, while only 37% okayed introducing postgraduate science programmes.

RECOMMENDATIONS

1. Visual medium in the form of video lessons, is a powerful and very effective means of learning. This report has revealed the importance of at least the minimal use of such a powerful mode of instruction. The university should take necessary steps to know why the video is not used by students, and encourage them to utilize it well. A request was made equally emphatically both by students & counsellors for provision of audio & video services. They requested the University to have a library of Audio & Video cassettes along with proper equipment at Jubilee Hills . This, they felt, would help students to utilise audio & video lessons better.
2. Although only a few counsellors have expressed their dissatisfaction as counsellors, the university is posed with a question - why the dissatisfaction? The University should look into this matter with consideration to improve counsellors' performance and conditions.
3. Counsellors have revealed that they use only 'lecture method' for counselling. A good half of counsellors felt lecture method was not suitable. However, they had no idea of other methods of counselling/teaching. The University should give them proper training on alternative methods of teaching, suitably adapted to tackle adult learners too.
4. Although a good number of counsellors were satisfied with the conduct of practicals, an equal number (around 30%-40%) expressed their dissatisfaction and rated it below the level of practicals conducted at their conventional colleges. The University, must immediately look into the matter, plan and activate necessary steps to improve the performance of science practicals.
5. Opvarsity, a newsletter published and circulated by University was reported as 'not seen' by 26.67% of counsellors and 47% were not sure whether they had seen it or not. The University in all earnest should look into the cause for this and make Opvarsity available to all.
6. If printed course material production is important, it is equally important to see that the study material reaches the student on time. It is the onus of the University to look into this lapse and remedy it.
7. Course content and students' capacity to learn are the two sides of the coin. They are equally important, especially in the context

- of distance education, the study skills emerge as more important and a major consideration in the absence of teacher. The University should help its students learn and benefit from study skills.
8. More often than not, a student enters an educational programme without much serious thinking. The University should provide pre-entry counselling at least to those who seek, to avoid students making a wrong choice.
 9. The suggestion that filming of experiments whose purpose is only developing the analytical ability was welcomed favourably by the counsellors. The science subject departments of the Open University can look into this matter.
 10. The possibility of introduction of 'home-kits' for practicals also should be considered by the University. At the outset, the University can plan a pilot study on the impact of introduction of home kits.
 11. Even audio cassettes, which do not require elaborate equipment like video, were not utilized by counsellors. The University should look into this matter and take necessary action.
 12. While planning alternative measures for financing the science programmes, the University can take the practice of prorata system of payment in other institutes like Board of Intermediate for consideration.
 13. The departments of science subjects of the University, in offering science programmes, should give importance to vocational science courses viz., pathological analysis, agriculture, water and soil testing etc.

NOTE

The paper is based on the following research study:

RAO, M. SATYANARAYANA et al (1995) : SCIENCE EDUCATION THROUGH DISTANCE EDUCATION : COUNSELLORS' RESPONSE (A STUDY), Dr. B.R. Ambedkar Open University, Hyderabad. (mimeo).

I. Damayanthi Devi

Some disciplines of learning involve thinking activity only. Some others are generally acknowledged to contain only a 'doing' component. In yet some others it is held that the doing component predominates to such an extent that the discipline is described as a 'practical one'. Clinical diagnosis and analytical chemistry are good examples of such disciplines. The disciplines having very significant practical components include Zoology, Botany, Geology, Physics etc. In fact in most of the science subjects, learning through practical instruction and training plays a crucial role. Knowledge is acquired easily and with deep understanding and comprehension if the learner carries out suitable hands-on experiments pertaining to the different areas of the discipline. Even in the Open University system where self instruction takes predominance over others, the hands-on practical work in science subjects cannot be excluded. The necessary equipment has to be provided in the contact practical sessions. The necessary guidance is extended by the counsellor and also through the study material.

Before talking about how this practical training should be provided in contact class programmes one should have precise knowledge of two things.

What is a practical class ?

What is the teacher's role in practical classes ?

- I) Let us now talk about "What is a practical Class"
- A practical class is a self contained capsule' of specialised methods of learning. It shall emphasise :
- judiciously chosen learning material
 - defined explicitly worded tasks
 - defined time scheduling
 - prescribed technology support
-

Practical classes are therefore considered as learning vehicles. Different teachers have different views on the instruction offered in practical classes.

Some of these views are :

- i) Practical classes help in demonstrating the role and application of theory. Practical classes offer learners a first hand knowledge of the equipment required in the study, and the methods customarily used by the practitioners of the subject.
- iii) Practical classes bring home the skilled manipulative procedures to the learners
- iv) practical classes teach
 - * team work, and ability to co-operate
 - * writing of good work reports.
 - * verbal reporting of the results
- II) What is the teacher's role in setting up and running practical classes?

The teacher's role is very crucial in imparting knowledge. This role includes:

- defining the aims of the experiment
- setting of a frame of the experiment
- encouraging the learner's reflection during the class.
- developing the skills of responding to 'unseen' tasks of learners, for instance, teaching the learners of zoology the skills of identifying the phylum, class, order of an unknown specimen.

How should the practical class teaching be ?

Though the Open Universities adopt the multimedia approach in teaching, most of the Indian Universities are effectively using only the "print medium". So the self instructional or learning print material supplied by the Universities should effectively substitute the role of the teacher of conventional universities. Hence in this paper the author has stressed on the techniques to be adopted in print media for effective learning of the practical aspects of this subject. The salient features are illustrated through a model lesson entitled "DISSECTION OF AFFERENT BRONCHIAL ARTERIES OF SCOLIODON"

USE OF PRINT MEDIUM IN TEACHING A PRACTICAL ORIENTED LESSON

Such teaching material shall consist of :

- a) learning texts or guides
- b) highly illustrative practical lessons

LEARNING TEXTS:

The learning text intended shall contain linearly arranged and directly numbered learning steps. The steps may be direct instructions or instructions by way of self assessment questions.

For instance, in the above said module demonstration lesson, the instructions may be in the form of the following self assessment questions too.

- + Explain the external characters of scoliodon.
- + Describe the arterial system of scoliodon.
- + Describe the procedure needed for dissecting an animal.

INSTRUCTIONS

- Draw a well-labelled diagram of different branchial vessels of scoliodon in the space provided below
- Write down the description of the dissection.
(It can be accompanied by more associated questions)
- Explain to which organs the afferent branchial vessels supply blood.
- Give an account of the structure and functions of the heart
- What is the evolutionary significance of the heart of scoliodon.
- Describe the present status of Aquaculture in India
- Describe the conditions suitable for acquiring diseases in fishes.
- Appendices (To the instructions)
- Remove the placoid scales embedded in the dermis.
- Apply to them the vital staining procedure given in unit-23 of Ambedkar open university laboratory manual.

This type of learning text or guide has to be prepared and supplied to the learner. It is convenient to bind together learning guides prepared for each lesson in the form of a booklet. These may also include appendices, glossaries, bibliographies, references, data sets and so on. These workbooks should be the property of the learner. The teacher shall need them only to examine how the learner is progressing and to offer his feed back verbally to the learner.

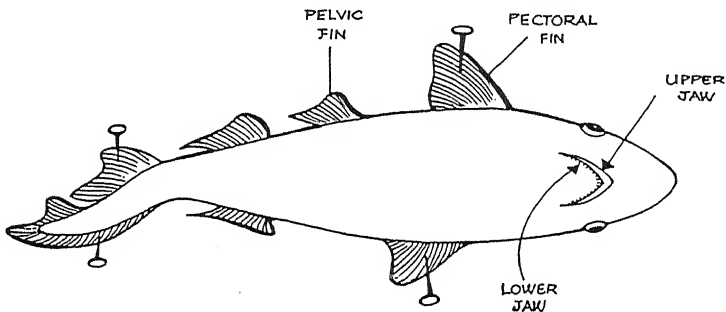
HIGHLY ILLUSTRATIVE PRACTICAL MANUALS

The learning material should be supported by a list of events in sequence in which the hands-on experiment is carried out. And it is

more useful for the learner if these sequential instructions are in the form of diagrams with some useful hints related to the particular event. For example "In the dissection model lesson" under reference namely, "The afferent branchial vessel of Scoliodon" the sequence of illustrative explanations may be in the following way.

Step 1) Fix the specimen (scoliodon) in a dissection tray with its ventral surface facing upwards as shown in Fig 1.

Figure-1

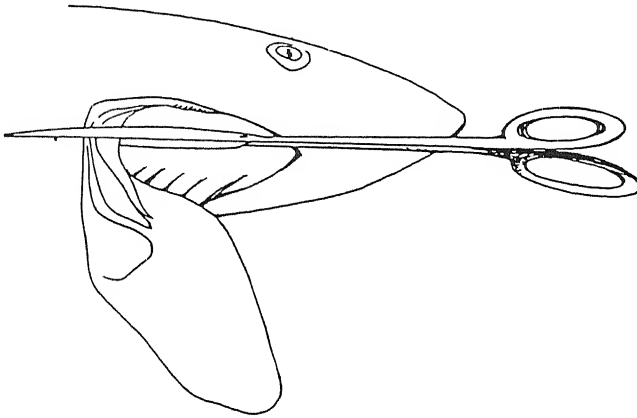


Step 2) Cut the integument transversely along the line of the pectoral and pelvic fins (FIG2)

- pericardial cavity will be exposed

Caution : Do not poke your scissors deep into the pericardial cavity, it may damage the heart.

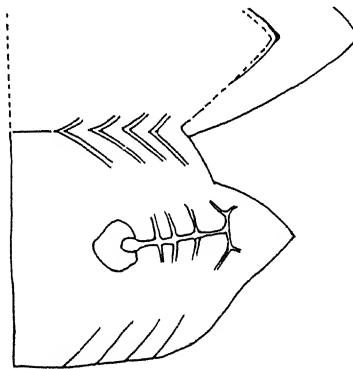
Figure-2



Step 3) Cut open the pericardial cavity to expose the heart Remove carefully the body wall and the superficial branchial muscles from the front end of the ear. (Fig 3)

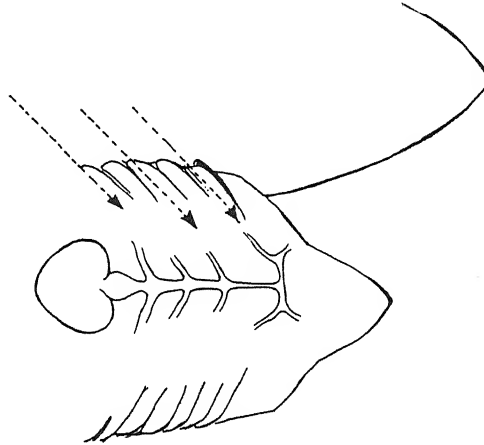
- A reddish brown conical heart can be observed mid ventrally.
- locate conus arteriosus, trace out up to ventral aorta
- the five branchial arteries can also be seen.

Figure-3



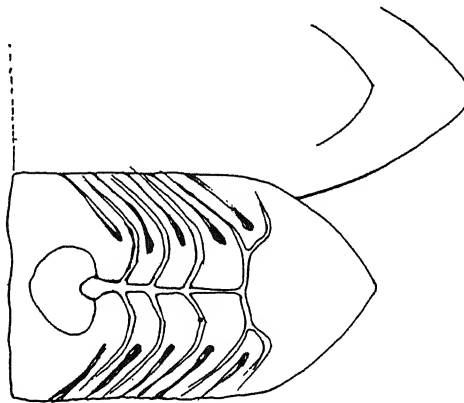
Step :4) Cut away the tissue from the gill rakers. Follow the path shown in the dotted lines and arrow marks to trace out the afferent branchial vessels arising from ventral aorta (FIG 4)

Figure-4



Step:5) Trace out carefully the five pairs of afferent branchial arteries and black paper your dissection and display it nicely .(Fig 5).

Figure-5



This type of guided teaching enables Open University learners to understand the process step by step systematically unlike the present practical instruction where only a single diagram is provided to describe the entire experiment/dissection.

CONCLUSION

Several Indian Open Universities are offering Bachelor's level programmes through Open Learning (self instructional system). In this context print medium plays a vital role in imparting education besides the face-to-face counselling classes.

Learning through the texts and practical manuals containing self instructive illustrations and figures emphasising the sequential step by step learning or the demonstration of a dissection/ experiment will go a long way in substituting the conventional teacher's role in Open Universities.

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Laboratory Training : The Experience at Dr.B.R.Ambedkar Open University

12

Saraswati Rao

Science embodies the eternal quest of the human mind for absolute truth. Science, represents true knowledge, a body of facts, which can stand the test of scientific scrutiny. Subjects based on science are characterized by objectivity in observing and interpreting natural phenomena. Science is essentially concerned with parameters that can be measured and quantified. The emphasis is on precision and on manipulation of numerical data.

The teaching methods of science subjects have not changed significantly, for the past five decades. These methods have included descriptive theory and laboratory training.

Training students in laboratory techniques forms an integral part of teaching science. The objectives of training in laboratory techniques depend on the levels and purpose of the programme. The main objectives are to develop abilities in -

- (a) manipulation skills
- (b) accurate observation, measurement and collection of data
- (c) analysis and presentation of data
- (d) interpretation of data and critical evaluation of experimental design
- (e) production of novel suggestions for designing experiments

LABORATORY TRAINING AT DR.B.R.AMBEDKAR OPEN UNIVERSITY

Teaching of science subjects through the distant mode is, indeed, a challenging task. It goes to the credit of this university, that it did not hesitate to take up this challenge and offer science subjects to distant learners. Science subjects were introduced at the undergraduate level from the year of its establishment - 1983. A sizable number of learners, are employees of scientific and research laboratories. Others work in factories dealing with scientific equipment, glassware etc. These learners

seek progress in their professional careers but cannot go to conventional universities. It is then that they turn to the open learning system for education in science.

Dr.B.R.Ambedkar Open University has introduced all the five conventional science subjects namely - Botany, Chemistry, Geology, Physics and Zoology. These subjects necessarily include laboratory-based training.

The students opting to study Botany, Chemistry, Geology, Physics and Zoology have to attend 72 hours in the II year and another 72 hours in the III year for hands-on laboratory training. The University conducts practical instruction classes in the laboratories of the study centres, located in colleges affiliated to the conventional university. The practical sessions are held in summer when the regular colleges close for the vacation.

Dr.B.R.Ambedkar Open University has been conducting practical sessions for more than a decade. It is, indeed, time to assess the laboratory training and find out whether it is adequate.

Parity with conventional universities

Comparisons between the laboratory training offered by the Open University and that offered by the conventional system are bound to arise. This is because, the science subjects are the same as those in the conventional university. Since the distant mode of education is new, the efficacy and adequacy of its programmes, including laboratory training will be judged against those offered by the older and established conventional system. The science graduates of the open university will have to compete with their counterparts from the conventional system with respect to opportunities for employment or higher education. The onus of raising the standards of distant learners to the desired level, rests with the educators and planners of distance education.

Problems in providing adequate laboratory training

There are several problems in providing open learners with adequate laboratory training.

The Open University being an egalitarian institution attracts all types of learners including those with a very low set of prerequisites. A large number are those who could not get admission into the conventional university. Others are employed in scientific companies

and laboratories, fully versed with laboratory procedures. At the other end of the spectrum are housewives who have never seen a microscope or a measuring cylinder.

Thus, the counsellors who impart the laboratory training have to face a heterogeneous class of students with varying academic standards. This degree of heterogeneity is absent in the conventional university. As far as laboratory training is concerned, time is a constraint for the open learner. This becomes all the more accentuated when compared to the conventional system of education.

Employed learners or those engaged otherwise, find it difficult to obtain leave to attend practical sessions. Attendance at practical classes has been made compulsory as without it experimental instruction would be very difficult.

Then, there is the spatial constraint as the Open University depends on the availability of laboratories in the colleges in which the study centres are located.

Remedial Measures

The problems of providing open learners with adequate laboratory experience seems insuperable at first. Considerable amount of planning and organisation would be required by academicians, students services branch etc., to address the problems.

The time spent by the open learner in the laboratory should be put to maximum effectiveness. This can be done by the multimedia approach.

- (a) Use of printed materials. Well designed and illustrated laboratory manuals should be sent to the students well in advance. The learners must get familiar with the experiments to be done in the laboratory. This can be done by giving compulsory exercises to be done leisurely at their homes.

These compulsory exercises should include:

- (1) the theories and principles involved in the experiments,
 - (2) the crucial points of the experiments,
 - (3) the sequential steps involved in the experiments,
- (b) The multi-media approach of the open learning system accelerates the assimilation of requisite knowledge and technical skills in practical. Radio broadcasts, archive film material, audio cassettes can be used very effectively here.

The providers of distance learning are often new to the field and need to reorient their own perspectives and practices in teaching. A heterogeneous class of students with varying mental calibre, poses a major challenge to the counsellor. Although there may not be any universally accepted method of counselling based on a theory which might be termed as best by all the students, counsellors may need reorientation to teach distant learners.

The counsellors should -

- (1) be at ease with adult learners,
- (2) be aware of particular needs and circumstances of adult learners,
- (3) have knowledge about how distance education works and the kinds of resources, time frames needed for distance education course delivery
- (4) be open to new ideas, concepts of one's discipline,
- (5) be willing to learn new approaches to teaching and learning.

In keeping with the motto of the University "Education at your Door Step", the project, Mobile Science Laboratory was undertaken. This would make laboratory training available to students in geographically remote areas. The Mobile Laboratory has been constructed with the help of the Commonwealth of Learning, Vancouver, Canada.

In its efforts, to provide adequate laboratory training, the University is establishing laboratories at its headquarters. Quality Assurance control - A systematic and continuous monitoring of the laboratory training should be undertaken by the students service branch and the academics. An objective evaluation of laboratory training and laboratory manual would ensure good quality.

IMPORTANCE OF LABORATORY TRAINING

For more than fifty years or so, science education has been imparted through a combination of descriptive theory and experimental instruction. Now questions are being raised in certain quarters, as to the necessity of practical instruction in science subjects particularly in distance education. The critics question the justification of spending huge sums of money on practicals, along with making complex administrative arrangements. They argue that the overemphasis on practical work makes no direct contribution to the learning process.

Regardless of the arguments against practicals one must concede that the underlying principle of science is experience. As the wise man said:

I hear I forget

I read I remember

I see I believe

I do I know

It is essential to work with one's hands to acquire knowledge. Practical work motivates and interests the student. It keeps him mentally active and physically involved.

Besides, learning of science in the laboratory encourages the learner to:

- 1) plan, hypothesize and predict,
- 2) design and carry out investigations,
- 3) interpret results and findings,
- 4) draw inferences,
- 5) communicate about exploratory tests and experiments.

While in theory, laboratory instruction can develop several abilities of a learner, it is difficult to provide laboratory opportunities to all the students where hypotheses are not taught but tested and where laws are not learnt but discovered.

It is time to introduce innovative steps to make laboratory training easier. The laboratory procedures must be simplified so that some research and development would be warranted in this area. While print will remain an important medium in distance education, the increasing use of other media may change approaches to laboratory training in distance education. It would however be unwise to rely completely on vicarious exposures to experimental work. The practical sessions are important for here we can supply students with a much wider variety of materials and instruments.

Science education is essential in the evolving of the human being by removing ignorance and superstition and in developing a scientific temper.

"They are alone to be regarded as real teachers who can show by experiments what they teach. They are the deserving pupils, who having learnt from the teachers can actually perform them and (improve upon them). The rest are merely stage actors".

Anonymous

9th Century author

Teaching Zoology through Distance Education

13

Girija Neti

Critical Analysis Of The Existing Practices

Dr.B.R.Ambedkar Open University (Dr.B.R.A.O.U.) formerly A.P. Open University is the first open university in India to offer science subjects through Distance Education System. The mode of teaching science students is as follows, which has been arrived at through methods of trial and error and in response to the needs of the students.

Dr.B.R.A.O.U. has identified 23 colleges having good laboratory facilities throughout Andhra Pradesh as "Study Centres" to teach science subjects. 21 study centres in other parts of Andhra Pradesh and 2 study centres in the twin cities of Hyderabad and Secunderabad have been identified. The students are allotted different study centres mostly according to their choice, where, they are expected to attend classes for contact-cum-counselling and for practical training. Generally teachers teaching in conventional colleges are engaged to teach theory as teachers having experience in Distance Teaching are not many in number.

These teachers who are used to classroom teaching are not able to cover the entire syllabus within the allotted 24 teaching hours per year per subject. Out of 3 years of B.Sc., a student of Dr.B.R.A.O.U. studies only "Science and Technology" in the entire first year, and Invertebrata -(Course-I), Vertebrata (Course-II) in second year, Cytology, Histology, Embryology, Zoogeography, Ecology & Physiology(Course-III) and Fishery Sciences (Course-IV) in third year. In addition to the conventional university syllabus, open university students study 'Fishery Science' as an applied course in B.Sc.

Practical classes are arranged in two sessions per year at a stretch for 10 to 15 days each. As mentioned earlier, a majority of the students of Open University are employed. Sometimes it so happens that a

particular period fixed by the University may not be convenient to some of the students and the number of classes they get are restricted. In case a student fails to attend the classes offered by the University, he or she may not get a chance or opportunity to repeat the experiments, particularly dissections, etc.

SOME OF THE SUGGESTIONS FOR IMPROVEMENTS

In view of the above mentioned problems the following suggestions have been made to facilitate effective teaching by the University.

1. In the first year of B.Sc. apart from 'Science & Technology' one of the optional courses should be offered. This lessens the burden on the student in the second and third year programme.
2. The counsellors and the students of Open University should be very clear about the difference between "Teaching" and "Counselling" classes. The students are supposed to go through the lessons before they go to contact-cum-counselling classes and clarify the doubts they have. If this is not practised, then the very meaning of Distance Education is lost and it will become a replica of the conventional system. Counsellors should be given orientation in time management in the counselling sessions.
3. The university should plan for some regional science centres in Andhra Pradesh with laboratory facilities in district headquarters of zonal centres.
4. A museum (of specimens, charts and models etc.) should be arranged in regional centres and zonal centres so that students, can go to these centres to study museum specimens whenever convenient to them. The University has prepared laboratory manuals which give complete information about the experiments in a self explanatory fashion. To be more precise, in systematic Zoology, Classification, important characters and figures of specimens are given. In addition, exercises in drawing figures after observing the specimen and writing identification points are given. Similarly, in branches like Cytology, Embryology, Ecology, Histology, Osteology and Physiology very good manuals have been prepared. With the help of such lab manuals it is not really difficult for an Open University student to go to science centres, and study the specimens by himself. Thus a fewer number of classes can be allotted for systematic Zoology and a larger number for practicals

on dissections, physiological and ecological experiments. Similarly after taking counselling classes in Histology, Embryology and Osteology again with the help of the above mentioned laboratory manuals, a student can study various slides and bones in the Regional Science centres by himself. Regional Science centres must also be provided with Video and Audio Libraries. Regional Centres should prepare a timetable to show video cassettes (subject wise) and inform students through News Papers etc. The students who are free could come to the centres and watch the programmes. Any student who wants to listen to the Radio lesson, or watch Video programme at his convenience, should be permitted to do so by paying a nominal fee. Some of the important cassettes, such as on 'Dissections' etc., should be issued to the students borrowing on cards, so that they can practise at home with the help of the cassettes.

5. Extensive use of charts, transparencies projected on overhead projectors would save lot of time in drawing detailed figures in a counselling class and writing on the black board.
6. Sometimes dissections which are once shown on a Video or in a demonstration class are to be practised by a student on his own using indigenously available material so that the student can become perfect and well versed.

By implementing these suggestions, Dr.B.R.Ambedkar Open University can offer excellent coaching in science subjects. The University has recently started a "Mobile Laboratory" with the help of the Commonwealth of Learning (C.O.L.) Vancouver, Canada which is certainly going to supplement permanent laboratories for Open University science students.

Technical and Vocational Education through Distance Education

14

Shakeela Khanam

INTRODUCTION

The role of technical and vocational education in the modern era is quite obvious. Technical and vocational education has to take a lead in shaping the new social and economic order. Technological progress and social status of a nation depends upon qualitative and job-oriented education for a sizable portion of its population. Technical and vocational education is not easily accessible to the deserving, particularly in rural areas. It is therefore essential to plan technical and vocational education at post secondary level through distance mode to help unemployed youth, rural people, drop-outs and unskilled industrial workers improve their knowledge, skill and job potential. This aspect of education may also include a very immediate destination like learning a new word, symbol, concept, principle and above all developing a personality trait.

Education is a dynamic process. Every human being is born with talents. The role of education should harness these talents in a wholesome, integrated and balanced form. General education is classified as liberal and vocational. Liberal education is concerned with the cultural and academic aspects, whereas vocational education signifies training for a specific job.

According to Dewey, education with vocational aim will balance the distinctive capacity of the individual with social service. For the human resource development adequate planning of technical and vocational education (TVE) is most essential.

For social order and economic self-reliance, vocational efficiency and technical competency are equally essential. Pure liberal education tends to be useless and unproductive and total vocational or technical education tends to be mechanical. These two aspects of education must complement each other.

Importance of TVE

TVE is not simply bread and butter education. It need not minimize intellectual and moral development of human life. With advances in science and industrial technology the vocational aspect has become an important aim of education. The knowledge gained may become useless if an individual cannot earn a decent livelihood. TVE is most effective in transforming the learner into a self reliant and economically independent person in modern society, which has become very complex with increased specialization and multiplicity of occupations. As a matter of fact the return per rupee to be spent by the authorities at TVE level will be much higher compared to the level of non technical education. A TVE literate will be able to improve his knowledge and thereby increase his income.

Advantages

Vocational education strikes a balance between economic and industrial progress. It is a kind of insurance against unemployment. It tests and recognises one's aptitude towards a particular field and develops the person to innovate and invent technologies in the concerned vocation. It reduces the impact of verbalism and mere intellectual domination. It satisfies the persons with lower intelligence and at the same time enhances one's potential for intellectual training and balanced development of the human personality. It is closely associated with financial benefits and increased productivity which would lead to economic prosperity of the country in general and the people in particular.

Disadvantages and Remedial Measures

Unplanned vocationalisation results in chaos in education. Its introduction at various levels should be implemented after due consultations with the educationists and planners. Its implementation needs an awareness among the masses otherwise people think it inferior. This is a major obstacle and a disadvantage. Its introduction needs financial support to have tools and workshops but by selecting the existing technical institutes as study centres, this problem may be overcome. Lack of coordination among various agencies may weaken its implementation. Integrated coordination among the implementing authorities like open university, planners, industries and others can

strengthen its growth and development. Introduction of obsolete vocations may increase unemployment which is against the spirit of vocationalisation.

Effective consultations with industrialists and educationists may help in introducing of new and job-generating courses. Above all the courses should be designed to suit the learner and society.

Aims of TVE through distance education

TVE through distance education may become successful with the following aims :

To help deserving persons by providing adequate information about various skills; To provide information to get suitable job in their selected field; To assist the individual to acquire a technique of analysis of occupational information about his/her general and specific abilities, interests, powers as he/she may need for wise choice;

To assist industrial workers to adjust to jobs in which they are engaged and to assist and encourage economically weaker persons who have discontinued their studies, and to impart suitable vocational skills so that they may have job potential or they may start earning on their own venture with the assistance from public sector financial institutions.

The success of TVE through distance mode depends upon the effective implementation and periodical evaluation of the above cited aims.

Technical and Vocational Courses

The craze for job-oriented education can be well understood and at the same time the facility of pure academic education is quite obvious. Much of the unrest among the educated youth is due to the insecurity of job prospects.

The educated unemployed will be a great danger to the nation. Hence a clear-cut analysis of the job should be made, the national requirements assessed and the vocational education organized on the basis of the job potential. This needs proper planning. In our country 75% of our population are engaged in agriculture for their livelihood. Technical and vocational courses should be organised such that fillip is given to agriculture.

The following vocational and technical courses may be useful for rural people in addition to the course in modern methods in

Agriculture

Horticulture

Aquaculture

Floriculture

Food Processing

For urban areas : Courses at post secondary level

Basic electronics Medical Lab Technology

Food and Nutrition Tourism

Bio Technology Pharmacy

CONCLUSIONS

Vocationalisation of distance education should be done in a systematic manner in the light of manpower requirement. Education and training in many countries is no longer dependent only on traditional methods to meet the needs and demands of individuals, industry and governments. Innovative methods of distance education and open learning are being employed to offer opportunities for flexible and relevant responses to dramatically changing social, economic and technological environments. Most of the countries are employing distance learning for TVE to meet critical manpower needs.

Educational reconstruction in our country is to be looked at from different angles envisaging a better future and vast expansion of educational field and keeping in view the various problems typical to ourselves - national, political, social, economic and the like.

Existing degree courses are purposeless. We need to have a system where a student could stand on his feet after completing his education. It is high time to think on vocational courses now, keeping in view students' welfare and changing global economic scenario.

Well-organised and efficiently functioning technical and vocational education and training institutions are undoubtedly important to economic development, hence they lead to new economic relations between nations.

Dr.B.R.Ambedkar Open University may become the first open university in our country if it introduces technical and vocational courses.

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Research on Distance Education in Andhra Pradesh

15

C. Sesharatnam

Andhra Pradesh is one of the few Indian States which recognised very early the potential and role of distance education in the process of democratisation of education. It is also a State which came under the immediate impact and influence of the British Open University, a great educational innovation of 20th century.

The first distance higher education programme in the university sector began in Andhra Pradesh in 1972 at Andhra University. This happened just three years after the founding of the British Open University and one year after setting up of the National Committee under the chairmanship of G Parthasarathy to suggest the feasibility of an open university for India. The School of Correspondence Courses of Andhra University in its initial stages encountered many difficulties and hardships. No support and strength came from the academics and administrators of the university and its colleges. Most of them felt that correspondence education was an inferior form of education and hence had to be discouraged. Skepticism and cynicism were openly expressed. In spite of this psychological and emotional resistance from the conventional academics, distance education began to spread slowly. Within a short period, the potential and use of distance education was recognised by the State educational planners, particularly the university planners. Distance education slowly spread to the other major regions of the State - Sri Venkateswara University area and Osmania University area.

Today we have in the State eight conventional universities offering a variety of correspondence courses. These are :

1. Andhra University
2. Sri Venkateswara University
3. Osmania University

4. Jawaharlal Nehru Technology University
5. Nagarjuna University
6. Central Institute for English and Foreign Languages
7. Kakatiya University
8. University of Hyderabad

Besides these eight universities, six other conventional universities in South India enrol every year a fairly good number of students in Andhra Pradesh. These are :

1. Annamalai University
2. Madras University
3. Madurai Kamaraj University
4. Mahatma Gandhi University
5. Bharatiyar University
6. Mother Teresa University

Besides the above, certain private commercial educational organisations also offer distance courses. Among them the well publicised ones are :

1. Andhra Pradesh Productivity Council
2. The Institute of Financial Analysts of India
3. Hyderabad Institute of Management Studies
4. The Institute of Chartered Computer Professionals of India
5. DNF College of Journalism
6. Rachana School of Journalism
7. Institute of Correspondence Studies
8. Indira Educational Academy
9. Indian Institute of Materials Management
10. National Institute of Ecology and Environment

A new and prestigious era in the history of distance education in Andhra Pradesh began with the establishment of Andhra Pradesh Open University in 1982. The newly set up distance teaching university pioneered the modern communication technology based distance higher education in the State. The new University was visualised by its founders as an effective and powerful instrument of equalisation of higher educational opportunities in the State. The first State Open University paved the way for the founding of six other state level open universities and one national level Open University. The establishment of IGNOU and one of its Regional Centres and the founding of the State Open

School in Andhra Pradesh added prestige and popularity to the distance teaching learning process in the State.

Most of the studies we now have on distance education, consist of presentations of staff numbers of the open university and correspondence institutions in the State to seminars, workshops and symposia organised by the Open University in the State.

The notable seminars & workshops so far conducted by the Open university are :

- National Seminar on Methodologies for Student Support Services in Open university System (1989)
- National Workshop on Academic Counselling in Distance Education (1992)
- International Seminar on Technical and Vocational Programmes through Distance Education (1992)
- National Seminar on Assuring Quality in Distance Education (1994)
- National Workshop on Application of New Technologies in Distance Education (1994)
- Workshop on Research in Distance Education (1995)

Besides these, presentations were also made by distance educators at the seminars, workshops and conferences and colloquia organised by other agencies. Some of these are :

- Regional Seminar on Distance Education in South India organised by IGNOU Hyderabad Regional Centre (1989).
- National Conferences held by School of Distance Learning and Continuing Education of Kakatiya University and Indian Distance Education Association.
- National and International Conferences organised by All India Association for Educational Technology
- Seminar on Distance Education for Women's Development (1992).
- World Bank Seminar on Accommodating Social Demand for Higher Education : How cost effective are Open Universities in the Asian Countries (1992)

Presentations were also made at Conferences of Asian Association Open University and International Council for Distance Education. Besides, the Centre for Evaluation of the Open University conducted 25 studies on various functions of the University.

In spite of its 23 year history, distance education could not generate enough research activity in the provision of distance education. Studies

on distance education in the State are very limited and mostly informative and descriptive. Research studies and investigations are very few and are not referred by known theorists of distance education. The list of research works on distance education in Andhra Pradesh which led to the award of M.Phil./M.Litt. and Ph.D degrees are given in the Appendix. It is disheartening to note that hardly a few of these contributions are cited in professional periodicals and works abroad. B N Koul's work on staff development and correspondence tuition done during his tenure at CIEFL and G Ram Reddy's reflections of his experiences in setting up Andhra Pradesh Open University and Indira Gandhi National Open University gained good recognition and place nationally and internationally. Such instances are very few.

A rapid review of the research activity in distance education in the State indicates the following :

1. Research efforts have been fragmentary and isolated. From the points of view of theoretical value and design the research activity leaves much to be desired.
2. Most of the studies conducted so far have focussed on issues at the micro-level.
3. Except a few exploratory studies, most of the studies were evaluative in nature.
4. From the point of view of methodological aspects, most of the studies are of a descriptive type - highlighting the status and functioning of the system - exploring facts and figures related to its different dimensions.
5. Maintaining quality in spread of distance education does not seem to be the concern of distance educators. With the number of institutions offering distance courses increasing year by year and the variety of new courses growing day by day, the problem of quality assurance should demand our immediate concern.

There exists no specialised journal/newsletter exclusively devoted to the dissemination of latest thoughts and practices in distance education at the regional or State levels. Recently two journals (Kakatiya Journal of Distance Education and Osmania Journal of Distance Education) have appeared on the scene but they did not cover qualitative studies on the functioning of various components of distance education in the State.

The research activity of distance educators and educational managers falls short of the expected standard in giving a new direction

and strength to distance education in Andhra Pradesh. At the same time, the spurt in research effort after 1985 does hold promise that scholars in Andhra Pradesh are becoming more and more sensitive to the various issues confronting distance education. The twenty dissertations on distance education approved for the award of M.Phil and Ph.D degrees by universities in Andhra Pradesh is an indication of this.

A majority of distance learners in the State are with Institutes of Correspondence Courses of conventional universities and hence the quality and quantity of research in distance education depend on the personnel there. Research is to be promoted and concentrated on the issues and concerns confronting them. The recent Research Report of IGNOU prepared by Bakhshish Singh and others and edited by B N Koul on correspondence/distance education in India during 1989-90 and the Report of the Committee on Distance Education of Central Advisory Board of Education (CABE) focussed on several disturbing features of these institutes. Some of these features are :

- Most correspondence institutes offer courses in Arts and Humanities only, enrollment in professional courses is concentrated in B.Ed. and M.Ed.
- Correspondence courses are often an extension of courses offered in the conventional mode and retain the same rigidities with regard to admissions and examinations
- Virtually all correspondence courses use the print medium exclusively and are not multi-media based
- Lack of coordination between institutes of correspondence studies has led to considerable duplication of effort and wastage of scarce resources
- Correspondence institutes generally charge higher tuition fees than the conventional system
- Correspondence institutes are organisationally weak and neglected and their internal efficiency is low
- Student support services are virtually non-existent, opportunities for face-to-face contact between teachers and students are few and feedback on student assignments is minimal

The State Open University should play the role of an apex body for research in the State. As its area of operation is the entire State and its study centres are spread over the whole State, it should play a

critical role in promoting research in distance education so that it can help the distance education system in meeting the educational needs of the people who are denied and deprived of the benefits of education provided through formal methods.

In view of rapid expansion of distance education, there is a greater need for research inputs to the system. Even though the system is over two decades old, it has not yet attracted serious attention of researchers and scholars. The research on the system is not proportionate to the volume of student body. The research done so far is limited in quantity and quality. The following are some of the broad areas on which research needs to be promoted intensively:

- politico - socio - economic factors leading to the establishment of distance education institutions
- aims and objects - their fulfillment
- organisational structure - reasons for adopting a particular model
- role of regional and study centres
- course development - approaches - models - significance and problems in course teams
- identification of education needs - methods and mechanisms
- nature and types of courses - feedback from students, tutors and counsellors
- characteristics of students
- problems in dropout and persistence
- multi-media instructional system - nature and components
- role of communication and information technology
- offering science and technology courses - problems in providing lab facilities, practical works
- student support services - Why? What? How?
- face to face tuition and correspondence tuition
- assessment procedures and methods
- evaluation of the system - organisation, methods, procedures, results, modification of the system on the results of evaluation
- impacts on and gains of the states

The Centre for Staff Training and Development, and the Centre for Evaluation of the State Open University, the Staff Training and Research Institute in Distance Education of the National Open University, University Grants Commission, the Commonwealth of Learning and professional bodies like ICDE and AAOU should play

a vital role in stimulating motivation and developing skills and knowledge necessary for conducting research in distance education. In this context B N Koul's remarks are worth recalling. "The single most important reason which calls for this emphasis is that the distance education institutions look up to conventional universities as standards for acceptable norms, credibility and role models. If conventional universities have lived all along without systematic research and development activities, why is it obligatory for DE institutions? Having come from conventional institutions, the staff of distance education institutions, academic, non-academic and technical, remain predisposed not to raise this question... It needs to be emphasised that the question has to be raised, and answered too"

The responsibility of distance education academics in promoting research capacity is great. They must foster the development of research capability through teaching and staff development programmes and carry out research to ensure continuing improvement and enrichment of the institution's performances.

Appendix

**RESEARCH WORKS (Ph.D & M.Litt / M.Phil) ON DISTANCE
EDUCATION IN ANDHRA PRADESH**

S. NO.	NAME OF RESEARCHER	NAME OF DISSERTATION	Ph.D/ M.Phil/ M. Litt.	YEAR OF SUBMISSION	NAME OF SUPERVISOR	NAME OF UNIVERSITY/ INSTITUTION WHICH AWARDED DEGREE
1.	S R PRAHALAD	APPLICATION OF PROGRAMMED INSTRUCTION TO DISTANCE EDUCATION	M LITT	1978	M L TICKOO	CIEFL
2.	FAIZUR RAHMAN	AN INVESTIGATION INTO THE EFFECTIVENESS OF SOME TECHNIQUES AND PROCEDURES ADOPTED BY SCRIPT WRITERS, PRODUCERS, AND COURSE DESIGNERS OF ENGLISH BY RADIO	M LITT	1980	K V DEVIDAS	CIEFL

Contd.

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3.	M VYDEHI	A CRITICAL EVALUATION OF THE DISTANCE TEACHING MATERIALS (PART-I - ENGLISH, AT 1 YEAR DEGREE LEVEL, USED BY SRIVENKATESWARA UNIVERSITY) LEADING TO A REFORMED INSTRUCTIONAL FORMAT FOR THESIS MATERIALS	M LITT	1984	B N KOUL	CIEFL
4.	ANIL SARWAL	A PROPOSAL FOR TRAINING HIGH SCHOOL TEACHERS OF ENGLISH IN INDIA THROUGH DISTANCE TEACHING UNITS BASED ON AN EMPIRICAL STUDY OF THE RELEVANT TEACHER FACTORS	M LITT	1985	B N KOUL	CIEFL
5.	K AMALI RAJ	TEACHING POETRY BY CORRESPONDENCE - AN ANALYSIS OF THE MADRAS UNIVERSITY POST GRADUATE COURSES LEADING TO A SELF- INSTRUCTIONAL FORMAT	M LITT	1989	MUKTA PRAHLAD	CIEFL
6.	R KISHORE KUMAR	TUTORING DISTANCE LEARNERS : AN ALTERNATIVE APPROACH FOR ANDHRA PRADESH OPEN UNIVERSITY LEARNERS DOING THE FOUNDATION COURSE IN ENGLISH	M LITT	1990	MUKTA PRAHLAD	CIEFL
7.	K MANJULA	HELPING DISTANCE LEARNERS ACHIEVE SELF-RELIANCE THROUGH AN ANALYSIS OF THEIR NEEDS	M LITT	1991	MUKTA PRAHLAD	CIEFL
8.	C PADMA MURTHY	COUNSELLING AND LEARNING IN DISTANCE EDUCATION: THE SIGNIFICANCE OF ROLE PERCEPTION	M LITT	1991	MUKTA PRAHLAD	CIEFL
9.	JAYA VUPPALA	DISTANCE EDUCATION AS AN ALTERNATE FORMAT OF CURRICULUM ORGANISATION : IMPLICATIONS FOR LANGUAGE TEACHING	M PHIL	1992	LALITHA EAPEN	CIEFL
10.	RASHMI SRINIVAS	TEACHER TRAINING THROUGH THE DISTANCE MODE: AN APPROACH TO THE TEACHING OF GRAMMAR	M LITT	1992	MUKTA PRAHLAD	CIEFL
11	J ASHA LATHA	PERCEPTION OF LEARNERS ABOUT DISTANCE EDUCATION	M PHIL	1990	R VENKATESWARA RAO	OSMANIA UNIVERSITY

Contd.

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12.	M SATYANARAYANA	ADMINISTRATION OF DISTANCE EDUCATION: A CASE STUDY OF INSTITUTE OF CORRESPONDENCE COURSES, OSMANIA UNIVERSITY	M PHIL	1992	D RAVINDRA PRASAD	OSMANIA UNIVERSITY
13.	L RAJYA LAKSHMI	DISTANCE EDUCATION FOR DEVELOPMENT: A STUDY	M PHIL	1991	V S PRASAD & P SATYA-NARAYANA	ANDHRA PRADESH OPEN UNIVERSITY
14.	K RAGHUNATH	MANAGEMENT OF DISTANCE EDUCATION: A CASE STUDY OF ANDHRA PRADESH OPEN UNIVERSITY	PH.D	1991	K VENKA-TESWARLU	ANDHRA UNIVERSITY
15.	PUSHPA DEVI JAIN	A DEPTH STUDY INTO THE FUNCTIONING OF ANDHRA PRADESH OPEN UNIVERSITY	PH.D	1991	M SREE RAMA MURTHY	OSMANIA UNIVERSITY
16.	P KALAVATHI	FOUNDATIONAL APPROACH TO TEACHING LEARNING PROCESS IN DISTANCE EDUCATION	PH.D	1991	V NARAYAN KARAN REDDY	OSMANIA UNIVERSITY
17.	P SUNANDA RAO	DISTANCE TEACHING OF ENGLISH TO ADULTS: DESIGNING A NEED BASED COURSE FOR THE UNDERGRADUATE STUDENTS OF AN OPEN UNIVERSITY	PH.D	1993	B T DESAI	OSMANIA UNIVERSITY
18.	C PUSHPA RAMAKRISHNA	FOSTERING INDEPENDENT LEARNING IN THE OPEN CURRICULUM: A CASE FOR LITERARY STUDIES	PH.D	1993	JACOB THARU	CIEFL
19.	P VIJAYA LAKSHMI	PANDITROLE OF DISTANCE EDUCATION IN EMPOWERMENT OF WOMEN: A CASE STUDY OF DR B R AMBEDKAR OPEN UNIVERSITY	PH.D	1994	P SANDEEP	OSMANIA UNIVERSITY
20.	C SESHARATNAM	MULTI MEDIA INSTRUCTIONAL SYSTEM IN DISTANCE EDUCATION: A CASE STUDY OF DR B R AMBEDKAR OPEN UNIVERSITY	PH.D	1994	P SANDEEP	OSMANIA UNIVERSITY

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